

ARCHAEOLOGIA :
OR
MISCELLANEOUS TRACTS
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VOLUME LIX.



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WESTMINSTER.
SOLD AT THE SOCIETY'S APARTMENTS IN BURLINGTON HOUSE.

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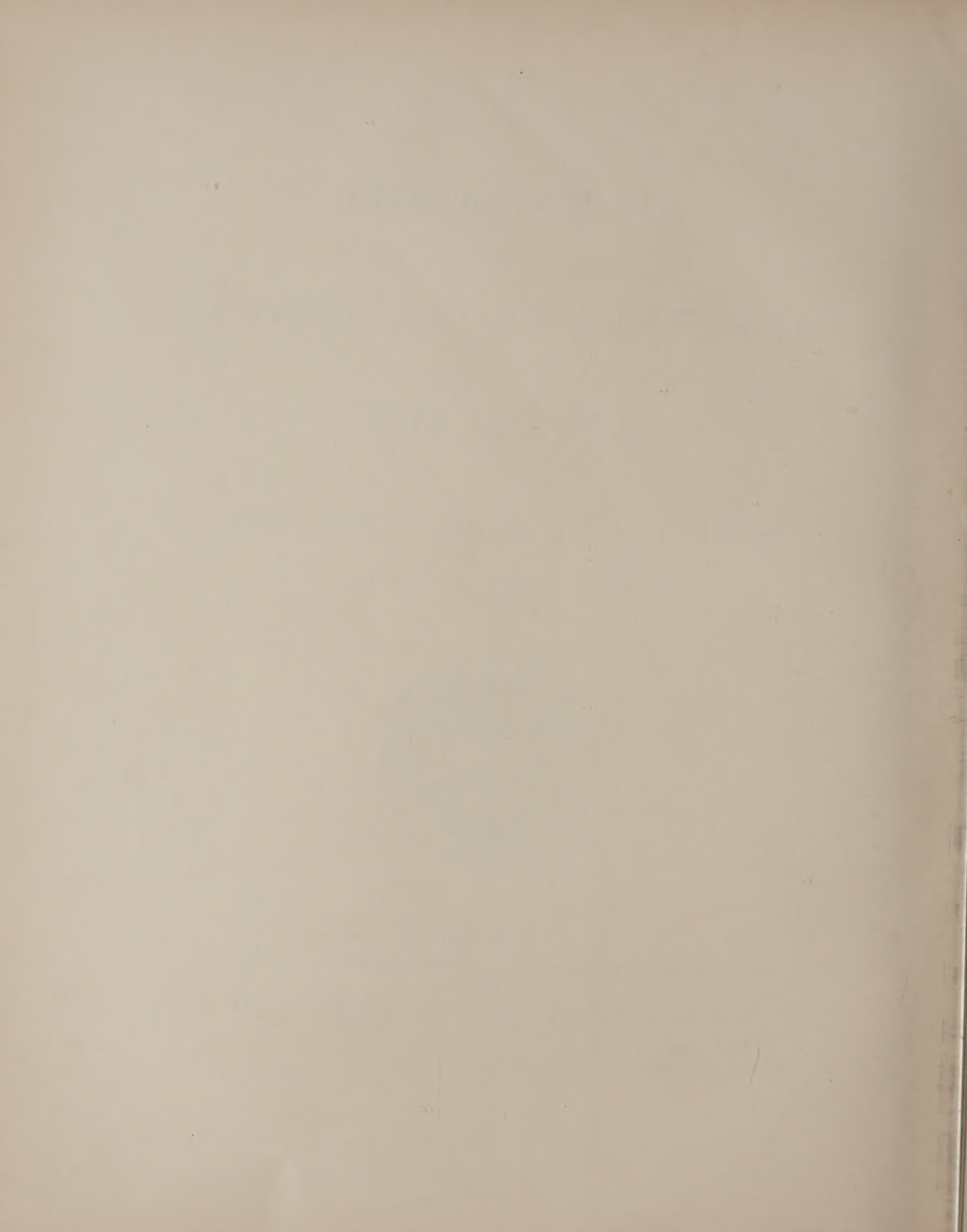


TABLE OF CONTENTS.

	PAGE
I.— <i>Some Chancery Proceedings of the Fifteenth Century.</i> By C. TRICE MARTIN, Esq., B.A., F.S.A., Assistant Keeper of the Public Records	1—24
II.— <i>The Crystal of Lothair.</i> By ORMONDE M. DALTON, Esq., M.A., F.S.A.	25—38
III.— <i>Some Post-Visigothic Churches in Spain.</i> By ARTHUR G. HILL, Esq., M.A., F.S.A.	39—56
IV.— <i>The Hauberk of Chain Mail, and its Conventional Representations.</i> By J. G. WALLER, Esq., F.S.A.	57—74
V.— <i>Records of the Manor of Durrington, Wilts.</i> By T. F. KIRBY, Esq., M.A., F.S.A.	75—82
VI.— <i>Notes on a Standing Cup of Silver Gilt with the Arms of William the Silent, the Property of the Earl of Yarborough, F.S.A.</i> By CHARLES HERCULES READ, Esq., Secretary	83—86
VII.— <i>Excavations at Caerwent, Monmouthshire, on the Site of the Romano- British City of Venta Silurum, in the years 1901—1903.</i> By T. ASHBY, Jun., Esq., M.A., F.S.A., A. E. HUDD, Esq., F.S.A., and A. T. MARTIN, Esq., M.A., F.S.A.	87—124
VIII.— <i>Roman and later Remains found during the Excavations on the Site of Newgate Prison, 1903—1904.</i> By PHILIP NORMAN, Esq., Treasurer	125—142
IX.— <i>The Imagery and Sculptures on the West Front of Wells Cathedral Church.</i> By W. H. ST. JOHN HOPE, Esq., M.A.; with Suggestions as to the identification of some of the Images, by W. R. LETHABY, Esq.	143—206
X.— <i>Notes on some probable traces of Roman Fulling in Britain.</i> By GEORGE E. FOX, Esq., Hon. M.A. Oxon., F.S.A.	207—232

	PAGE
XI.— <i>Note on a Gold Standing Cup in the possession of the Duke of Portland, K.G.</i> By CHARLES HERCULES READ, Esq., Secretary	233—234
XII.— <i>The Thirty Pieces of Silver.</i> By G. F. HILL, Esq., M.A.	235—254
XIII.— <i>Some Notes on Fourteenth Century Conveyancing.</i> By T. F. KIRBY, Esq., M.A., F.S.A.	255—280
XIV.— <i>The Island of Ictis.</i> By CLEMENT REID, Esq., F.R.S.	281—288
XV.— <i>Excavations at Caerwent, Monmouthshire, on the site of the Romano-British City of Venta Silurum, in the year 1904.</i> By T. ASHBY, Jun., Esq., D.Litt., F.S.A.	289—310
XVI.— <i>The Linares Bas-Relief and Roman Mining Operations in Baetica.</i> By HORACE SANDARS, Esq.	311—332
XVII.— <i>Excavations on the site of the Roman city at Silchester, Hants, in 1903 and 1904.</i> By W. H. ST. JOHN HOPE, Esq., M.A., and GEORGE E. FOX, Esq., Hon. M.A. Oxon., F.S.A.	333—370
XVIII.— <i>On the Wall Paintings in All Saints' Church, Friskney, Lincolnshire.</i> By the Rev. HENRY JOHN CHEALES, M.A., late Vicar of Friskney, and Rural Dean of Candleshoe	371—374
XIX.— <i>Notes on the Augustinian Priory of St. Bartholomew, West Smithfield.</i> By E. A. WEBB, Esq., F.S.A.	375—390
XX.— <i>The Prehistoric Tombs of Knossos.</i> By ARTHUR J. EVANS, Esq., Litt.D., F.R.S., F.S.A.	391—562
INDEX	563—584

LIST OF ILLUSTRATIONS.

PLATE		PAGE
I.	The Crystal of Lothair - - - - - facing	25
II.	Church of Santa Cristina de Lena (Oviedo), Spain. Interior	
	view, looking east - - - - - facing	39
	Fig. 1. Plan of the Church of Santa Maria Naranco - -	40
	Fig. 2. Church of Santa Maria Naranco. North elevation -	42
	Fig. 3. Plan of the Church of San Miguel de Lino. Ground	
	floor - - - - -	44
	Fig. 4. Plan of the Church of San Miguel de Lino. Upper	
	floor - - - - -	45
	Fig. 5. Church of San Miguel de Lino, from the west -	46
	Fig. 6. Church of San Miguel de Lino. Capital of Pier at	
	Crossing - - - - -	47
	Fig. 7. Plan of the Church of Santa Cristina de Lena -	48
	Fig. 8. Longitudinal section, looking north, of the Church of	
	Santa Cristina de Lena - - - - -	49
	Fig. 9. Marble <i>antepecho</i> in the Church of Santa Cristina de	
	Lena - - - - -	50
	Fig. 10. Plan of the Church of Santiago de Peñalva -	53
	The Hauberk of Chain Mail :	
	Fig. 1. Conventional representations of chain-mail from monu-	
	mental brasses - - - - -	59
	Fig. 2. Double-ringed mail from the hauberk of the De Mauley	
	effigy formerly in York Minster - - - - -	64
	Fig. 3. Conventional representation of "banded mail" -	65
	Fig. 4. Part of a hauberk from Northern India - -	65

PLATE	PAGE
Fig. 5. Conventional representation (enlarged) of mail in a MS. in the Royal Library, Berlin - - - -	69
Fig. 6. Assyrian helmet with attachment of mail, in the British Museum - - - - -	70
III. Seals from Charters of the Manor of Durrington, Wilts facing	75
IV. Silver-Gilt Cup of William the Silent - - - facing	83
V. Silver-Gilt Cup of William the Silent (inside of cover) - facing	84
VI. Silver-Gilt Cup of William the Silent (inside of bowl) - facing	84
VII. Bronze Panels for a Silver Cup - - - facing	85
VIII. Sea Fight between Dutch and Spaniards at Enkhuysen, 11 October, 1573 - - - - - facing	86
IX. Caerwent.—Plan of North Gate, Houses I _N , II _N , III _N , and IV _N , and Blocks A _N , B _N , C _N , D _N , and E _N - - - facing	87
Fig. 1. Section of inner impost of North Gate - - -	88
Fig. 2. Section of outer impost of North Gate - - -	89
Fig. 3. Section of cornice block of North Gate - - -	89
Fig. 4. The North Gate, from without - - -	90
Fig. 5. The North Gate, showing internal blocking - - -	91
Fig. 6. Section of base found in blocking of North Gate - - -	92
Fig. 7. Section of the ditch outside the North Gate - - -	95
Fig. 8. South wall of Room 2, House II _N - - -	98
Fig. 9. Threshold stone in House No. III _N - - -	102
X. Caerwent.—Plan of Houses V _N , VI _N , VII _N , and VIII _N , Blocks F _N , G _N , H _N , and I _N , and the Amphitheatre - facing	104
Fig. 10. Flanged tile found in Room 1, House No. VIII _N - - -	109
Fig. 11. Plan of Houses IX _N , X _N , and XI _N in the School Playground - - - - -	113
XI. Caerwent.—Plan of the Excavations on the Village Green, facing	115
Fig. 12. Rectangular platform found on the Village Green - - -	117
Fig. 13. Section of capital found on the Village Green - - -	118
Fig. 14. Section of base found on the Village Green - - -	118
Fig. 15. Sections of base and panel-moulding of inscribed stone found on the Village Green - - - - -	119
Fig. 16. Inscription found on the Village Green - - -	120
XII. Caerwent.—Sculptured stone found on the Village Green facing	120
Fig. 17. Section of drain found in the Church Path - - -	122

PLATE	PAGE
Fig. 18. Plan of Caerwent, showing discoveries down to November, 1903- - - - -	124
XIII. Roman remains found on the site of Newgate Prison facing	125
XIV. Roman remains found on the site of Newgate Prison facing	126
XV. Roman wall by Newgate. View from south-west - facing	127
Fig. 1. Roman wall by Newgate. View from west, showing remains of plinth - - - - -	128
XVI. Roman wall by Newgate. Inner or Eastern face - facing	128
Fig. 2. Plinth of Roman gate at Newgate, from east -	130
Fig. 3. View of Subway under Newgate showing water channel - - - - -	134
XVII. Newgate.—South end of Subway, with junction of culvert facing	134
XVIII. Newgate.—Section of south end of Subway - - facing	136
XIX. Substructure of Newgate. South elevation - - facing	137
XX. Wells Cathedral Church.—View of the North Tower, showing the general arrangement of the Imagery and Sculptures facing	143
XXI. Wells Imagery.—The Angels and Apostles, etc. of the western gable - - - - - facing	145
XXII. Wells Sculptures.—Our Lady and Child, and the Coronation of Our Lady - - - - - facing	150
XXIII. Wells Imagery.—Four female figures from the Lower Tier facing	151
XXIV. Wells Sculptures.—Angels from the Lower Tier - facing	152
XXV. Wells Sculptures.—Groups of the Old Law - - facing	153
XXVI. Wells Sculptures.—Groups of the New Law - - facing	154
XXVII. Wells Imagery.—Figures from the Upper Tier - facing	155
XXVIII. Wells Imagery.—Seated figures on the buttresses - facing	156
XXIX. Wells Imagery.—Figures from the Upper Tier - facing	157
XXX. Wells Imagery.—Martyrs from the Upper Tier - facing	158
XXXI. Wells Imagery.—Martyr-Kings from the Upper Tier facing	159
XXXII. Wells Sculptures.—Resurrection Groups - - facing	160
XXXIII. Wells Sculptures.—Resurrection Groups - - facing	161
XXXIV. Wells Imagery.—The Queen of Sheba and King Solomon facing	175

PLATE	PAGE
XXXV. The Queen of Sheba and King Solomon; from the cathedral churches of Amiens and Chartres - - facing	176
Part of the Entry into Jerusalem. From painted glass at Laon - - - - -	180
XXXVI. King Solomon and the Queen of Sheba, from Rochester Cathedral Church - - - - facing	182
XXXVII. The Queen of Sheba and King Solomon, from the church of Our Lady of Corbeil; now at Saint-Denys - facing	183
XXXVIII. Wells Imagery.—Two Preachers from the Lower Tier facing	185
XXXIX. Wells Sculptures.—Groups of the New Law - - facing	192
XL. Wells Imagery.—Three Bishops from the Upper Tier facing	195
XLI. Wells Imagery.—Figures from the Upper Tier - facing	196
XLII. Wells Imagery.—Figures from the Upper Tier - facing	197
XLIII. Wells Imagery.—Figures from the Upper Tier - facing	198
XLIV. Wells Imagery.—Martyr-Kings from the Upper Tier facing	199
XLV. Wells Imagery.—Figures from the Upper Tier - facing	200
XLVI. Wells Imagery.—Figures from the Upper Tier - facing	201
XLVII. Wells Imagery.—Group of three female figures from the Upper Tier - - - - - facing	202
XLVIII. Wells Imagery.—Figures from the Upper Tier - facing	203
XLIX. Wells Imagery.—Figures from the Upper Tier - facing	204
L. Wells Imagery.—Warriors from the Upper Tier - facing	205
LI. Wells Imagery.—Figures from the Upper Tier - facing	206
LII. Wells Cathedral Church.—Diagram showing the disposition and arrangement of the Imagery and Sculptures on the West Front - - - - - facing	206
LIII. Pompeii.—The Large Fullonica - - - - facing	207
LIV. Pompeii.—Painting from the Fullonica - - facing	208
LV. Pompeii.—Painting from the Fullonica - - facing	209
LVI. Pompeii.—Painting of a press in the Fullonica - facing	210
LVII. Roman Villa at Chedworth, Gloucestershire - - facing	210
Plan of a Roman Villa in Titsey Park - - -	214
LVIII. Plan of a group of Roman buildings uncovered at Darenth, Kent, in 1894-5 - - - - facing	219

PLATE	PAGE
LIX. Darenth Villa: Fig. 1. Conduit or Well-house; Fig. 2. Hypocaust in Room 14 (Block D), looking north - facing	222
LX. Darenth Villa: Fig. 1. Tanks in Room 16 (Block D); Fig. 2. Tanks, originally baths, in Chamber 9 (Block D) facing	224
LXI. Darenth Villa: Fig. 1. South end of long tank (17); Fig. 2. Hypocaust in Room 14 (Block D), looking south facing	226
LXII. Darenth Villa: Fig. 1. Hypocaust in Chamber 27 (Block C); Fig. 2. Hypocaust in Chamber 27 (Block C) - facing	227
LXIII. Darenth Villa: Fig. 1. Cold Bath and Hot Bath in Block D; Fig. 2. Stoke-hole, etc. in west end of Block D - facing	229
LXIV. Gold Standing Cup in the possession of the Duke of Portland, K.G. - - - - - facing	233
Silver coins of Rhodes, fourth century B.C. - - - - -	247
Medallic portrait of Judas Iscariot, and production of a Rhodian coin - - - - -	249
Silver reproduction of fourth century coin of Rhodes, fifteenth century - - - - -	252
Denarius of Tiberius and Staters of Tyre and Antioch -	254
LXV. Fig. 1. The Causeway to Ictis, about 100 B.C.; Fig. 2. Basin of the Solent in late Pliocene times - - facing	284
LXVI. Caerwent.—Plan of Houses X. XI. XII. and XIII. - facing	290
Fig. 1. Object of Kimmeridge Shale - - -	291
Fig. 2. Graves of two infants, House No. XI. Room 3 -	292
Fig. 3. Base of a statue of Mars, from House No. XI. Room 5 - - - - -	293
LXVII. Caerwent.—Architectural fragments found in 1904 - facing	295
Fig. 4. Western earth drain (north of House No. XII.) -	296
Fig. 5. House No. XII. Room 20 (looking south-east) -	302
LXVIII. Caerwent.—Mosaic pavement in House XII. Room 36 facing	304
Fig. 6. Tile flue, House No. XII. Room 41 - -	306
Fig. 7. Plan of Caerwent, showing discoveries down to November, 1904 - - - - -	310
Map of part of the Province of Jaen, Spain - - -	312
Sculptured stones from Castulo, Spain - - -	316, 317
LXIX. Roman Bas-relief from Linares, Spain - - facing	321

PLATE		PAGE
	Ruins of Salas de la Galiarda, near Baños, Jaen, Spain -	323
	Roman lead weights from the Rio Tinto mines - -	324
	Stone mould for casting lead loom-weights found in the Palazuelos mine - - - - -	325
	Terra-cotta figure in the Seville Museum - - -	326
	Roman inscribed stone found at the Centenillo mine - -	326
	Roman bronze helmet found in the Sierra Morena - -	326
	Roman bronze bell found in the Sierra Morena - -	326
	Earthenware jar found in the Sierra Morena - -	327
	Roman mining tools found in Baetica - - -	328
LXX.	Roman mining tools found in Baetica - - facing	328
LXXI.	Examples of Roman lamps found in mines in Baetica facing	329
	Stone hammers from Roman mines in Baetica - -	329, 330
	Copper bucket found in the Centenillo mine - - -	331
	Copper bucket found in the Posadas mine - - -	332
LXXII.	Silchester.—Plan of southern half of <i>Insula XXXIII.</i> facing	334
LXXIII.	Silchester.—Plan of northern half of <i>Insula XXXIII.</i> facing	336
LXXIV.	Silchester.—Block plans showing the growth, suggested arrangements, and alterations of the Baths in <i>Insula</i> <i>XXXIII.</i> - - - - - facing	341
LXXV.	Silchester.—Historical ground plan of the Baths - facing	342
LXXVI.	Silchester.—Sections of the Baths - - - facing	342
LXXVII.	Silchester.—The Baths: apse, etc. of the northern <i>caldarium</i> facing	345
LXXVIII.	Silchester.—The Baths: the latrine, looking west - facing	347
LXXIX.	Silchester.—The Baths: upper and lower floors of the second cold bath - - - - - facing	353
LXXX.	Silchester.—The Baths: remains of the <i>caldaria</i> - facing	354
LXXXI.	Silchester.—The Baths: general view looking south-west facing	355
LXXXII.	Silchester.—The Baths: general view looking north-west facing	356
LXXXIII.	Silchester.—The Baths: general view looking south - facing	357
LXXXIV.	Silchester.—The Baths: the latrine, looking east - facing	358
	Fig. 1. T-shaped furnace in Block III. <i>Insula XXXIII.</i> -	336
	Fig. 2. Remains of the early portico of the Baths - -	341

PLATE	PAGE
Fig. 3. Sections of architectural remains found in the Baths - - - - -	342
Fig. 4. Section of a Purbeck marble bason found in the <i>frigidarium</i> - - - - -	345
Fig. 5. Sections of fragments of two Purbeck marble basons found in the Baths - - - - -	346
Fig. 6. Warm air conduit under the floor of the southern <i>caldarium</i> - - - - -	350
Fig. 7. Western arch of drain through the <i>præfurnium</i> at the south end of the Baths - - - - -	355
Fig. 8. Architectural remains found in the Baths - - - - -	358
Fig. 9. Archway in the eastern end of the latrine - - - - -	359
Fig. 10. Fallen fragment of wall with remains of a window - - - - -	360
Fig. 11. Masonry built on piles - - - - -	362
Fig. 12. Outlet of the cold bath - - - - -	365
Fig. 13. Circular stamp with title of the Emperor Nero - - - - -	366
Fig. 14. Block-plan of Silchester, showing portions excavated down to the end of 1904 - - - - -	370
LXXXV. Friskney Church, Lincolnshire.—Wall Painting of the Nativity - - - - - facing	372
LXXXVI. Friskney Church, Lincolnshire.—Wall Painting of King David and the Prophets - - - - - facing	373
LXXXVII. Friskney Church, Lincolnshire.—Wall Painting of the Pope and the Doctors - - - - - facing	374
LXXXVIII. The Parish of St. Bartholomew the Great, E.C. - facing	387
The Cemetery of Zafer Papoura :	
Fig. 1. Chamber-Tomb (No. 92). Plan, sections, and façade - - - - -	395
Fig. 2. Entrance passage of Tomb 92 - - - - -	396
Fig. 3a. <i>Larnax</i> or clay sarcophagus seen in position in Tomb 93 - - - - -	397
Fig. 3b. Clay sarcophagus or <i>larnax</i> from Tomb 93 - - - - -	398
Fig. 4. Remains of crouched skeleton in <i>larnax</i> from Tomb 80 - - - - -	399

PLATE	PAGE
Fig. 5. Section of <i>larnax</i> from Artsà, showing position of skeleton - - - - -	400
Fig. 6. Plan of Grave No. 27, showing covering slabs and ledge at side - - - - -	401
Fig. 7. Plan of Grave No. 26, showing covering slabs and ledge at end - - - - -	401
Fig. 8a. Section of Shaft-Grave (No. 33) - - - - -	402
Fig. 8b. Plan of Shaft-Grave (No. 33) - - - - -	403
Fig. 9. Incised signs on slab of Grave No. 25 - - - - -	403
Fig. 10. Section of Shaft-Grave (No. 36) - - - - -	404
Fig. 11a. Plan of Pit-Cave (No. 66) - - - - -	406
Fig. 11b. Longitudinal section of Pit-Cave (No. 66) - - - - -	407
Fig. 11c. Transverse section of Pit-Cave (No. 66) - - - - -	408
Fig. 12a. Plan of Pit-Cave (No. 7) - - - - -	409
Fig. 12b. Longitudinal section of Pit-Cave (No. 7) - - - - -	410
Fig. 13. Plan of double Shaft-Grave (No. 1) - - - - -	412
Fig. 14. Painted stirrup-vase from Grave No. 1 - - - - -	412
Fig. 15. Bronze knife from Grave No. 1 - - - - -	412
Fig. 16. Plan of Shaft-Grave (No. 4) - - - - -	413
Fig. 17. Plan of Pit-Cave (No. 6) - - - - -	414
Fig. 18. Plan of sepulchral cell of Pit-Cave (No. 7) - - - - -	415
Fig. 19. Bronze knife with solid handle, from Pit-Cave (No. 7) - - - - -	415
Fig. 20. Gold beads of a necklace from Pit-Cave (No. 7) - - - - -	416
Fig. 21. Gold-plated ring showing Sphinx, from Pit-Cave (No. 7) - - - - -	416
Fig. 22. Ivory boat, perhaps a casket, from Pit-Cave (No. 7) - - - - -	417
Fig. 23. Painted "amphora," from Pit-Cave (No. 7) - - - - -	417
Fig. 24. Plan of Chamber-Tomb (No. 8) with section of entrance passage - - - - -	418
Fig. 25a. Plan of Chamber-Tomb (No. 9) - - - - -	418
Fig. 25b. Chamber-Tomb (No. 9). Longitudinal section of Chamber B-B - - - - -	419
Fig. 25c. Chamber-Tomb (No. 9). Transverse section of Chamber A-A - - - - -	419

PLATE	PAGE
Fig. 26 <i>a</i> . Painted <i>larnax</i> or clay sarcophagus from Chamber-Tomb (No. 9) - - - -	420
Fig. 26 <i>b</i> . End of a painted <i>larnax</i> from Chamber-Tomb (No. 9) - - - -	421
Fig. 27. Plan of "the Hunter's Grave" (No. 10) - -	422
Fig. 28. Bronze arrow-heads from "the Hunter's Grave"	422
Fig. 29. Plan of Chamber-Tomb (No. 11) - -	423
Fig. 30. Plan of Chamber-Tomb (No. 12) - -	423
Fig. 31. Bronze knife with ivory handle from Grave No. 13 - - - -	424
Fig. 32. Doorway of the Tomb of the Tripod Hearth (No. 14) - - - -	425
LXXXIX. Antiquities from the Cemetery of Zafer Papoura: Fig. 33. Tripod plaster hearth and group of bronze vessels in south-west corner of Chamber-Tomb (No. 14) . facing	426
Fig. 34. Plan of chamber, Tomb of the Tripod Hearth (No. 14) - - - -	427
Fig. 35 <i>a</i> . Bronze lamp, etc. from the Tomb of the Tripod Hearth (No. 14) - - - -	429
Fig. 35 <i>b</i> . Ornament of rim of bronze lamp - -	429
Fig. 36. Large bronze jug from the Tomb of the Tripod Hearth (No. 14) - - - -	430
Fig. 37. Bronze ewer from the Tomb of the Tripod Hearth (No. 14) - - - -	431
Fig. 38. Bronze tripod cauldron from the Tomb of the Tripod Hearth (No. 14) - - - -	432
Fig. 39 <i>a</i> . Bronze dagger with ivory hilt from the Tomb of the Tripod Hearth (No. 14) - - - -	433
Fig. 39 <i>b</i> . Side view of ivory mounted dagger-hilt -	433
Fig. 40. Portion of a wooden box with bone inlays, from the Tomb of the Tripod Hearth (No. 14) - -	434
Fig. 41. Ivory lid of a casket with shield-like bosses, from the Tomb of the Tripod Hearth (No. 14) - -	434
Fig. 42. Plan of Chamber-Tomb (No. 17) - - -	435
Fig. 43. Plan of Chamber-Tomb (No. 21) - - -	436
Fig. 44. Plan of Chamber-Tomb (No. 32) - - -	438

Fig. 45. Horned cover of <i>larnax</i> A, from Chamber Tomb (No. 32) - - - - -	439
Fig. 46. Clay chafing pan with charcoal, from Chamber-Tomb (No. 32) - - - - -	439
Fig. 47. Plan of the Carpenter's Tomb (No. 33) - - - - -	440
Figs. 48, 49, 50. Bronze objects from the Carpenter's Tomb (No. 33) - - - - -	441
Fig. 51. Plan of Chamber-tomb (No. 35) - - - - -	442
Fig. 52. Funeral offerings above the covering slabs of the Chieftain's Grave (No. 36) - - - - -	443
Fig. 53. Plan of the Chieftain's Grave (No. 36) - - - - -	443
Fig. 54. Upper part of bronze ewer from the Chieftain's Grave (No. 36) - - - - -	444
Fig. 55. Bronze frying-pan, and spiral ornament on rim, from the Chieftain's Grave (No. 36) - - - - -	444
Figs. 56 and 57. Bronze lance-heads from the Chieftain's Grave (No. 36) - - - - -	445
Fig. 58. Upper part and side view of a bronze sword from the Chieftain's Grave (No. 36) - - - - -	446
Fig. 59. Upper part and side view of a gold-plated sword from the Chieftain's Grave (No. 36) - - - - -	447
Fig. 60. Gold beads of necklace from the Chieftain's Grave (No. 36) - - - - -	448
Fig. 61. Agate lentoid bead with intaglio, from the Chieftain's Grave (No. 36) - - - - -	448
Fig. 62. Plan of Shaft-Grave (No. 42) - - - - -	450
Fig. 63. Bronze razor from Shaft-Grave (No. 42) - - - - -	450
Fig. 64. Plan of Pit-Cave (No. 43) - - - - -	451
Fig. 65. Plan of Shaft-Grave (No. 44) - - - - -	451
Fig. 66. Upper part of bronze sword, and one of the rivets, from Shaft-Grave (No. 44) - - - - -	452
Fig. 67. Painted stirrup-vase from Shaft-Grave (No. 44) - - - - -	453
Fig. 68. Plan of Chamber-Tomb (No. 49) - - - - -	453
Fig. 69. Ivory mirror-handle from Chamber-Tomb (No. 49) - - - - -	454
Fig. 70. Plan of Pit-Cave (No. 51) - - - - -	455
Fig. 71. Bronze knife from Pit-Cave (No. 51) - - - - -	456

PLATE	PAGE
Fig. 72. Plan of Pit-Cave (No. 55) - - -	456
Fig. 73. Painted stirrup-vase from Pit-Cave (No. 55) -	457
Fig. 74. Plan of Shaft-Grave (No. 62) - - -	458
Fig. 75. Painted vase from Shaft-Grave (No. 62) -	459
Fig. 76. Bronze dagger from Shaft-Grave (No. 62) -	459
Fig. 77. Plan of Pit-Cave (No. 64) - - -	460
Fig. 78. Bronze leaf-shaped razor from Pit-Cave (No. 64) -	461
Fig. 79. Plan of sepulchral cell, Pit-Cave (No. 66) -	461
Fig. 80. Gold beads of necklace, from Pit-Cave (No. 66) -	461
Fig. 81 <i>a</i> . Glazed paste beads from Pit-Cave (No. 66) -	461
Fig. 81 <i>b</i> . Faience cylinder from Pit-Cave (No. 66) -	461
Fig. 82. Plan of Pit-Cave (No. 67) - - -	463
Fig. 83. Painted stirrup-vase from Shaft-Grave (No. 68) -	464
Fig. 84. Plan of Chamber-Tomb (No. 72) - - -	466
Fig. 85. Gold beads of necklace from Shaft-Grave (No. 75)	466
Fig. 86. Plan of Pit-Cave (No. 76) - - -	467
Fig. 87. Plan of Chamber-Tomb (No. 80) - - -	468
Fig. 88. View of interior of <i>larnax</i> from Tomb No. 87, with skeleton in contracted position - - -	469
Fig. 89. Plan of double tomb (Nos. 83, 84) - - -	471
Fig. 90. Bronze dagger from Chamber-Tomb (No. 86) -	472
Fig. 91. Plan of Chamber-Tomb (No. 93) - - -	472
Fig. 92. Doorway of Chamber-Tomb (No. 94) - - -	473
Fig. 93. Plan of Chamber-Tomb (No. 95) - - -	474
Fig. 94. Bronze short sword from Chamber-Tomb (No. 95)	474
Fig. 95. Steatite pendant from Chamber-Tomb (No. 97) -	475
Fig. 96. Drop-shaped pendants and bead of crystal, from Chamber-Tomb (No. 97) - - -	475
Fig. 97. Plan of Chamber-Tomb (No. 98) - - -	476
Fig. 98. Bronze razor from Chamber-Tomb (No. 98) -	477
Fig. 99. Plan of Chamber-Tomb (No. 99) - - -	478
XC. Antiquities from the Cemetery of Zafer Papoura: Fig. 100. Group of objects from Chamber-Tomb (No. 99); Fig. 101. Objects belonging to a necklace and gold rings from Chamber-Tomb (No. 99) - - - facing	479
Fig. 102. Painted <i>larnax</i> (<i>a</i>) from Chamber-Tomb (No. 100)	481

PLATE	PAGE
Fig. 103. Plan of Chamber-Tomb (No. 100) - -	482
Fig. 104 <i>a</i> . Plan of Chamber-Tomb at Milatos - -	484
Fig. 104 <i>b</i> . Section of Chamber-Tomb at Milatos - -	485
Fig. 105. Group 1 of vases found in a Chamber-Tomb at Milatos - - - - -	486
Fig. 106. Group 2 of vases found in a Chamber-Tomb at Milatos - - - - -	487
Fig. 107. End of painted <i>larnax</i> (No. 1) from a Chamber-Tomb at Milatos - - - - -	489
Fig. 108. General plan of the Cemetery of Zafer Papoura -	492
XCI. Antiquities from the Cemetery of Zafer Papoura: Fig. 109. Bronze Swords and Daggers from the Zafer Papoura Cemetery; Fig. 113. Bronze Spear-head and Knives from the Cemetery of Zafer Papoura - - facing	495
Fig. 110. Horned long-swords from Graves Nos. 44 and 36 - - - - -	496
Fig. 111. Tanged round-shouldered sword from Grave No. 46 - - - - -	497
Fig. 112. Gold-mounted bronze sword of cruciform type from the Chieftain's Grave (No. 36) - - -	500
Fig. 114. Painted clay stirrup-vases from graves of Zafer Papoura - - - - -	510
Fig. 115. Upper part of painted stirrup-vase from Shaft-Grave (No. 68) - - - - -	511
Fig. 116. Bronze bason from hoard found in the N.W. building of the Palace Site at Knossos - - -	512
Fig. 117. Painted vessels of various forms from graves of Zafer Papoura - - - - -	513
Fig. 118. Clay vessels of various forms from graves of Zafer Papoura - - - - -	515
Fig. 119. Jewelry from the graves of Zafer Papoura -	520
XCII. Fig. 120. View of interior of the Royal Tomb at Isopata, looking east - - - - - facing	527
Fig. 121. View of the <i>dromos</i> looking west - -	528
XCIII. The Royal Tomb at Isopata—General plan and longitudinal section, looking north - - - - - facing	529

PLATE	PAGE
XCIV. The Royal Tomb at Isopata.—Ground plan of inner chamber and fore-hall - - - - - facing	529
XCV. The Royal Tomb at Isopata.—Cross-sections of inner chamber, fore-hall, and <i>dromos</i> - - - - - facing	529
XCVI. The Royal Tomb at Isopata.—Longitudinal section of inner chamber, looking north - - - - - facing	529
XCVII. The Royal Tomb at Isopata.—Longitudinal section of inner chamber, looking south - - - - - facing	529
Fig. 122. Painted stirrup-vase from the south niche of the fore-hall- - - - -	531
Fig. 124. Porphyry bowl from the Royal Tomb - - -	532
XCVIII. Fig. 123. Objects belonging to earlier interments found in the Royal Tomb at Isopata - - - - - facing	536
XCIX. Fig. 125. Group of alabaster vases found in the Royal Tomb at Isopata - - - - - facing	538
Figs. 126 and 127. Lamps of purple gypsum - - -	540
Fig. 128. Diorite bowl, restored from a fragment - - -	541
Fig. 129. Hooked pin of twisted gold - - - - -	541
Fig. 130. Necklace of beads of lapis lazuli - - -	542
Fig. 131. Lapis lazuli pendants in form of long-tailed monkeys - - - - -	542
Fig. 132. Lapis lazuli pendant in form of a frog - - -	543
Fig. 133. Crystal pommel of a dagger - - - - -	543
Fig. 134. Large crystal bead - - - - -	543
Figs. 135, 136. Crystal whorls - - - - -	544
Fig. 137. Uncertain object of alabaster - - - - -	544
Fig. 138. Clay sealing, showing bull on architectural base -	544
Fig. 139. Silver cup (restored) - - - - -	545
Fig. 140. Handle and part of rim of silver cup - - -	546
C. Large painted "amphora" (fig. 141 <i>a</i>) with octopus and floral designs, from the Royal Tomb at Isopata - facing	546
Fig. 141 <i>b</i> . Part of the back of a painted "amphora" -	546
CI. Large painted "amphora" (fig. 142 <i>a</i>) with conventionalized plant designs, from the Royal Tomb at Isopata - facing	547
Fig. 142 <i>b</i> . Rim of painted "amphora" - - - - -	547
Fig. 143. Painted "amphora" with spiral patterns -	548

PLATE

PAGE

Fig. 144. Painted "amphora" with architectural motives -	549
Fig. 145. Conjectural restoration of the vault of the principal chamber of the Isopata tomb - - -	553
Fig. 146. Coping stone with incised signs, from niche of the Royal Tomb at Isopata - - - -	557
Fig. 147. Plan and section of Twelfth Dynasty Egyptian tomb at Hawara - - - - -	559

 ERRATA.

Page 73, line 1 - - For "Bucks" read "Berks."



Figure 1. A.

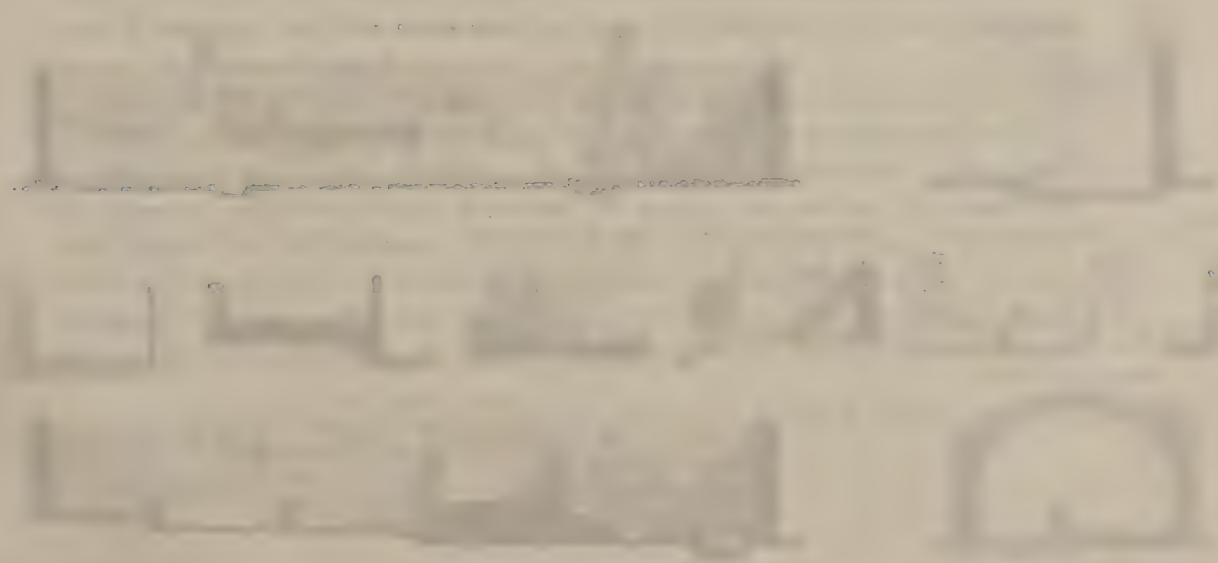


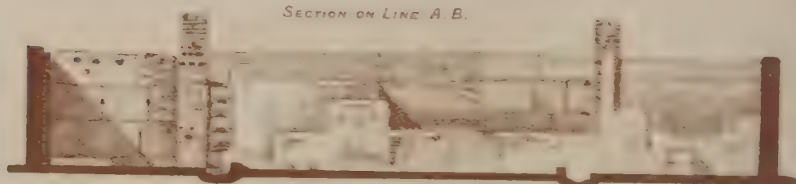
Figure 2. B.



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SECTION ON LINE A. B.



SECTION ON LINE R. S.

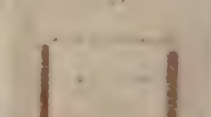
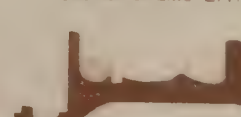
ELEVATION FROM

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SECTION ON LINE L. M.

SECTION ON LINE C. D.



F. KEIL & SON LITH.

POMPEII. THE LARGE FULLONICA. (Regio VI. Insula VIII. No. 20.)

X.—*Notes on some probable traces of Roman Fulling in Britain.*

By GEORGE E. FOX, Esq., Hon. M.A. Oxon., F.S.A.

Read 24th November, 1904.

IN the words of a well-known German archaeologist, *the work of the ancient fuller was twofold, to make ready for use the cloth fresh from the loom and to cleanse garments that had been worn.*^a

How the handicraft here briefly described may have been carried on in Britain during the Roman period it will be the endeavour of the following notes to show. In order to render clearer the purpose to which the various remains were put, which will be examined presently, it will be necessary by way of illustration to refer shortly to such examples of Roman workshops as are still existing, of whose uses as fulleries there can be no doubt. These examples can best be seen in the ruins of Pompeii, and the principal establishment of the kind in that city,^b with its tanks and paintings, will illustrate in a fairly complete manner the subject in hand.

Before describing this building the processes of fulling as displayed in it must first be detailed. These can clearly be made out to be (1) treading and washing the various articles sent for fulling with fuller's earth and other detergents, (2) steeping and rinsing these in water, (3) drying, (4) carding, (5) bleaching with sulphur or by exposure to sun and air, (6) pressing them. All these processes are displayed in the Pompeian fulleries, and have rather to do with the cleansing of garments than with the second section of the work named at the head of this paper, viz. making ready cloth fresh from the loom for the dyer, although

^a *Pompeii, its Life and Art*, by August Mau, translated by Francis W. Kelsey.

^b In Reg. vi. Ins. viii. No. 20.

provision is made for the latter also in the *fullonica* under consideration. Treading and beating cloth fresh from the loom in detergents, not only to free it from the natural grease in the wool but to render the fabric closer and firmer, is more especially the fuller's business.

The building in Pompeii in which the processes just named were carried on was not erected for the purposes of a *fullonica*. As in other instances to be seen in that town it had been a house of considerable size and of pre-Roman date, converted to the uses of a craft (see Plan, Plate LIII.). It consisted of a large peristyle or pillared *atrium* (1), the roof of which was supported by heavy piers, together with ranges of chambers lying along its southern and eastern sides. At the west end of the corridor on the north side is a raised platform (2). In this are constructed the treading places, six in number, two on one side, four on the other, of a narrow middle space. They consist of small rectangular compartments divided from each other by dwarf walls, the floor of each compartment being boldly dished, and in one corner, sunk in the masonry, is a large pot to contain the detergent in use.

A painting, one of a series, formerly adorning two piers of the eastern peristyle, shows precisely how these places were used (see Plate LIV.). In each compartment was set a pan containing the article to be fulled, together with the cleansing liquor, and the workman treading and jumping in it supported himself in so doing by means of the dwarf walls on each side of him.

It is obvious that the arrangements here detailed could only be of service for comparatively small articles, but for the larger ones, such as curtains, etc. and for the beating of undyed material, provision was made in a vaulted chamber (3 on Plan, Plate LIII.) entered from the north corridor. This has the greater portion of its floor raised 8 inches above the rest and bordered by a low, broad curb, 4 inches high (see Section L-M, Plate LIII.). A long cistern, with probably originally a water tap, exists in one corner, in another corner is a drain, and in a third, doubtless to contain cleaning material, a pot is sunk in the masonry, whilst a stone table, now removed, stood on the right hand of the doorway. In this chamber was found at the time of its discovery a glutinous fuller's earth like soap.^a On the raised floor articles steeped in cleansing fluid could be laid for treading or beaten with the fuller's bats or clubs.^b

^a *Real Museo Borbonico*, iv. 13 *et seq.* For the detergents employed see Pliny, *Nat. Hist.* xxxv. 57 (17), xxviii. 18 (66).

^b That such clubs were in use by the fullers for the purpose mentioned, at an early period, may



POMPEII.—PAINTING FROM THE FULLONICA. ($\frac{1}{4}$ linear.)



POMPEII.—PAINTING FROM THE FULLONICA. ($\frac{1}{4}$ linear.)

The tanks for washing, four in number, were built against the western wall of the court (see 4, Plate LIII.). Three of them drain one into the other and deepen from north to south. The fourth and southernmost is larger and deeper than the others.

The treading places were not always of the same form and material as those described. In the charming series of paintings in the house of the Vettii, also in Pompeii, where cupids are shown engaged in the operations of various craft, in that representing fulling a long wooden trough with high ends is figured, brackets being fixed in those ends for the two fullers employed in the trough to rest their arms upon whilst treading its contents. Again, the sepulchral monument to a fuller found at Sens exhibits the man at work in a square wooden receptacle with sides raised to a sufficient height for resting the hands upon.^a

For drying, the open area of the courtyard might have been employed, and the terraced roofs of the corridors. For the further operations of carding, bleaching with sulphur, and pressing, nothing would remain to show how these were carried on if it were not for the invaluable set of paintings already referred to as ornamenting two of the piers of the eastern corridor. In one of these (Plate LV.) may be seen a workman engaged in carding a garment which is hung upon a swinging pole. Another workman in the same painting is bringing

be inferred from a passage in the Ecclesiastical History of Eusebius Pamphilus, Bishop of Cesarea in Palestine (written before 326), in which, describing the martyrdom of the apostle St. James, called the Just, in accordance with the account of that event given by a writer of the middle of the second century (Hegesippus), he says, *Quidam autem ex eis, accepto fuste ex officina fullonis, quo comprimebat vestes, valide infligit ejus capiti: et sic Justus tradidit animam* (*Acta Sanctorum*, xiv. 35). The figures of the apostle St. James in mediæval art bear the emblem of his martyrdom in the form of a staff with a curved and thickened end, and this probably shows the form of club employed by the Roman fullers, as it is a well known fact that the shape of implements used in various handicrafts vary but little from age to age. At some period not ascertainable the processes of treading and beating appear to have been supplemented or superseded by a rude machinery worked by water-power, which raised and let fall hammers upon the cloth soaking in troughs placed beneath them, and this machinery, with some improvements, continued in use until early in the nineteenth century. The building containing it was called a fulling or tucking mill. A further process, not shown in the Pompeian paintings, was that of shearing the cloth after it was carded; but a relief from the tomb of a fuller in the museum at Sens shows this process, as also perhaps the method employed, for stretching the material. A cast of this relief may be seen in the museum at St. Germain, near Paris, in Hall XXII. The carding combs appear to have been set with a kind of thorn and with the skins of hedgehogs. See Pliny, *Nat. Hist.* viii. 37 (56).

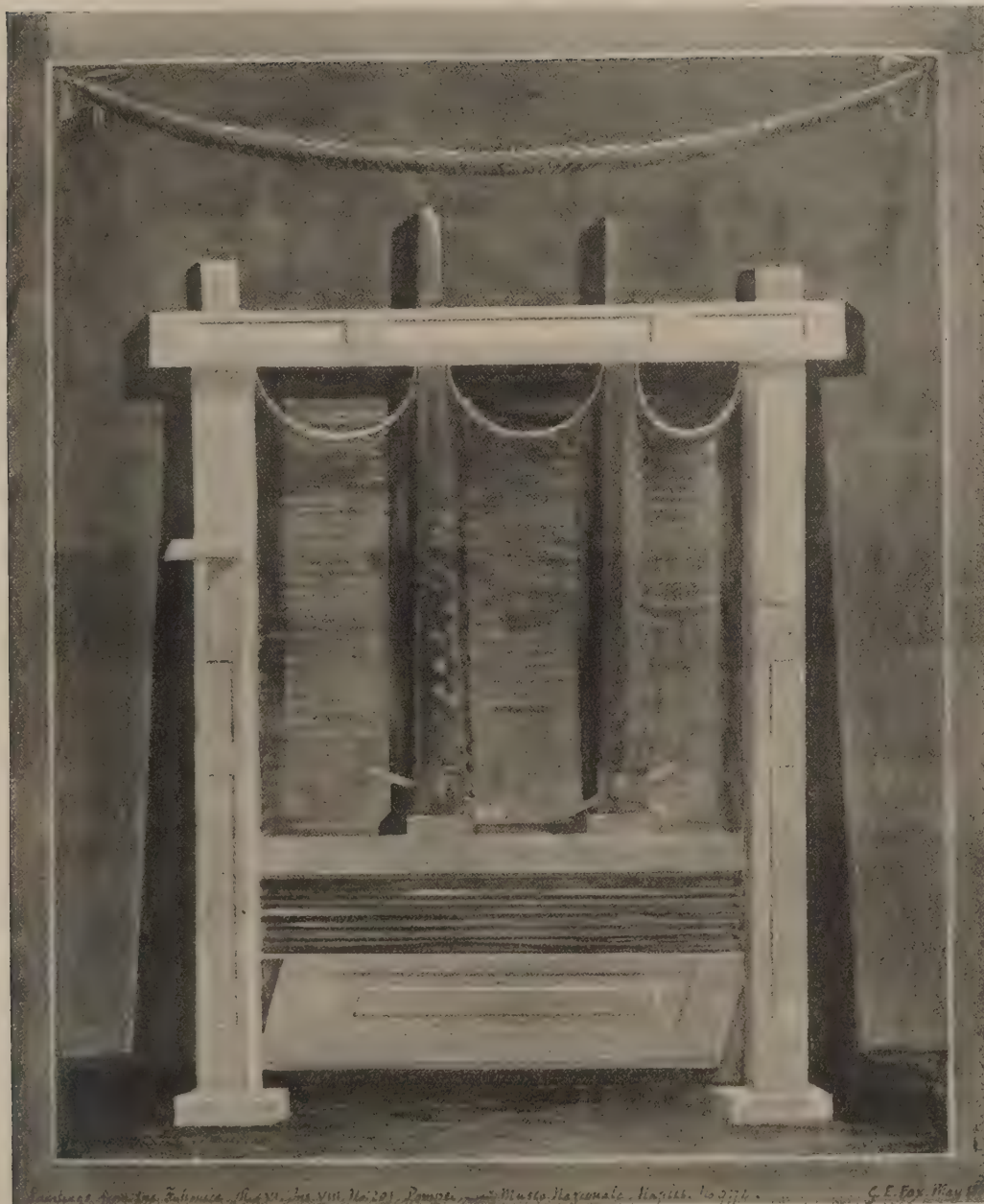
^a For an illustration of this monument, see C. Roach Smith, *Collectanea Antiqua*, v. p. xx.

in a large dome-shaped frame of osier or cane on his shoulders, and in his left hand he holds a brazen pot. The frame, it is conjectured, was intended to be covered by the already washed and carded garments; the pot, presumably containing burning sulphur, being placed beneath it for bleaching them by means of its fumes. Clothes are spread to bleach and dry to this day in Naples upon a similar contrivance. The method of pressing the fulled and bleached articles is admirably seen in another of these paintings (Plate LVI.) which represents a press of some size, with strong wooden framework and two screws, quite of modern character. It is not possible to say where such a press stood in the *fullonica*. For the storage of the finished goods there is a large closet (No. 5 on plan) which shows lines of shelving on the back wall, just near the main entrance in the northern corridor, and the chamber (No. 6 on the plan) had also been partly shelved probably for this purpose.

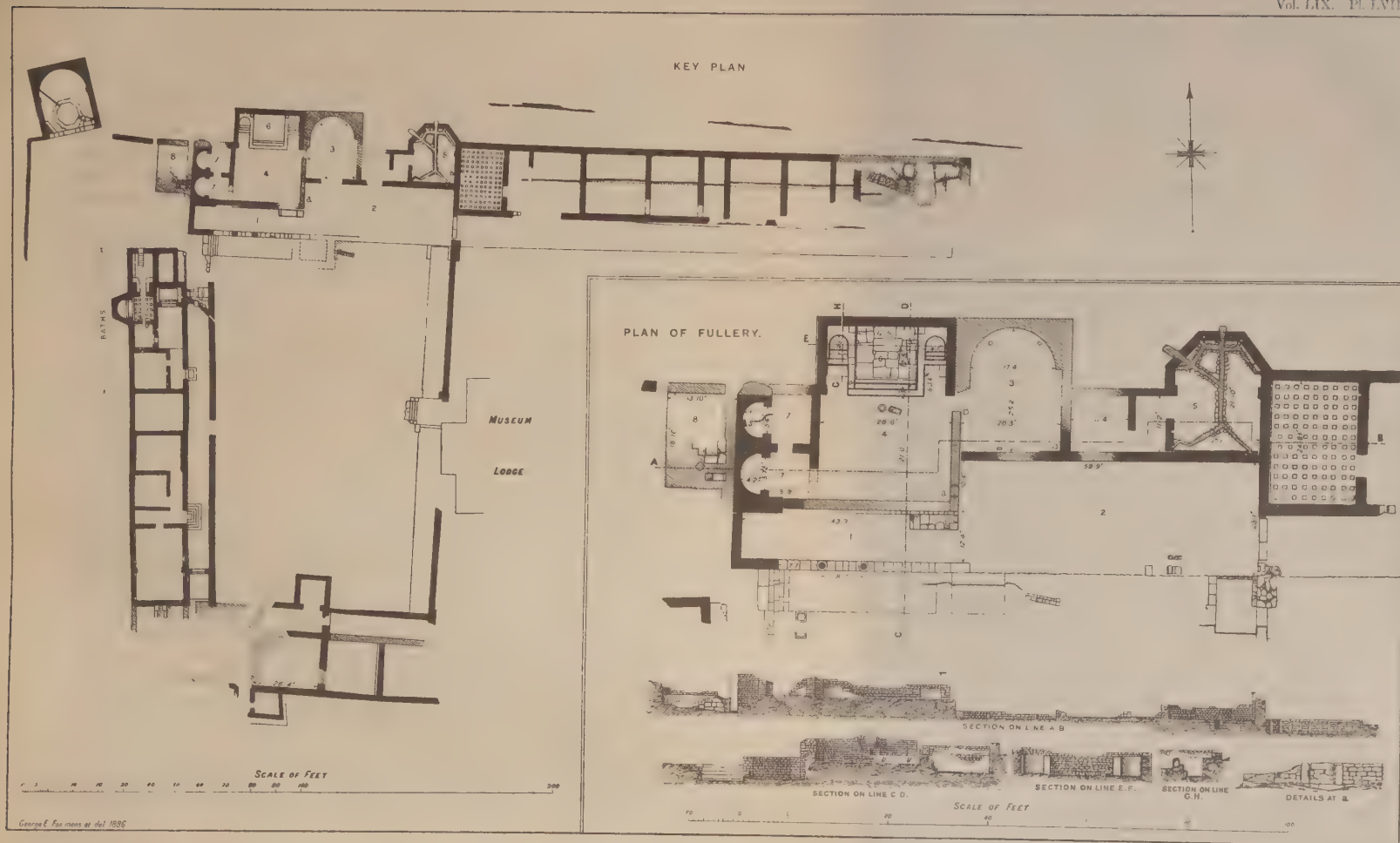
Enough has perhaps been said respecting this Pompeian *fullonica* to elucidate the methods employed in such establishments in the Roman period, and to furnish grounds of comparison and reasonable conjectures concerning the less perfect remains of what appear to be similar establishments in this country. Those to be treated of here are but three in number. Others, however, will doubtless be discovered, either it may be by further excavations of recorded buildings, or by careful note of such as may be uncovered in the future. The first to be noted is in the well-known villa near Chedworth, in Gloucestershire. (Plan LVII.) This villa was dug out by the late Mr. James Farrer, hon. member of the Society of Antiquaries of Scotland, who, in a short paper contributed to the Proceedings of that Society in 1865-66, described his discoveries. Another paper on the subject of the villa, illustrating various details on the site, by the late Mr. J. W. Grover, F.S.A., appeared in the *Journal of the British Archæological Association* for 1868,^a and a third, by the late Rev. Prebendary Scarth, was published in the same journal in 1869.^b Still later the writer of the present paper, after a prolonged examination of the remains, in which they were completely planned, contributed the result of his investigations to the *Archæological Journal*, vol. xlv. The site of the villa is in a nook of the wooded hills bordering the valley of the river Colne in Gloucestershire, seven miles from the town of Cirencester and something over two miles from where the Roman Foss Way crosses that valley. The assemblage of buildings constituting the villa formed originally two courtyards

^a Vol. xxiv. 129-135.

^b Vol. xxv. 215-227.



POMPEII.—PAINTING OF A PRESS IN THE FULLONICA. ($\frac{1}{4}$ linear.)



ROMAN VILLA AT CHEDWORTH, GLOUCESTERSHIRE.



of some size. Of the outer only the northern side remains, an ambulatory backed by a long range of chambers. Round the inner and westernmost of the two courtyards the buildings are in a more perfect state. The eastern side of it shows an ambulatory which was probably backed by chambers, but of these all trace has been swept away. On the south side portions of large chambers remain with a corridor giving on the court. The western end of this range is much ruined, and has not been fully explored. The western side is perfect, consisting as usual of a long ambulatory backed by a range of chambers, whilst its northern end holds the baths of the villa. No more perfect specimen of baths in a private establishment of the kind exists in this country. *Apodyterium*, *frigidarium*, *sudatorium*, *caldarium*, furnace, and wood-store, all are here; in fact every detail of such an establishment can be made out. A good bird's-eye view of these baths is to be found in Mr. Grover's paper.

It is at the northern end, however, of the courtyard that the buildings lie with which we have more particularly to deal. The evidences of change in this portion of the villa are clear enough in the remains still to be seen, but what was the original plan of this wing before the intrusion of the existing structures is not so clear. So far as can be made out, a portico, 43 feet 3 inches long, with pillars supporting its roof (1), the bases of two of which are still in place, occupied the western end of the wing, and at its eastern end widened into a hall 59 feet 9 inches long by 22 feet 8 inches wide (2). Behind this hall, and about the centre of the wing, was a fine chamber with an apsidal end, 25 feet 2 inches long by 19 feet wide, originally warmed by a pillared hypocaust (3). The western wall of this chamber was prolonged to meet the back wall of the portico just mentioned, and near the point of junction of the two walls was a small doorway at *a* subsequently blocked.

This is all that can be made out of the original disposition of the north wing. What lay behind the portico, perhaps itself a pillared entrance to the principal chambers of the villa of which No. 3 was one, cannot now be determined, but whatever constructions there may have been at this spot were subsequently swept away, and in their place a small court (4) was built with a floor raised some 3 feet above that of the quadrangular portico, this floor blocking the little doorway at *a*. At the same time, at the south-east corner, access to the court from the portico was given by a couple of broad steps and a wide opening in its south wall. Other alterations or additions are visible. Behind the hall (2) is a chamber with a three-sided apse (5) warmed by a somewhat rudely constructed

channelled hypocaust. Originally an adjoining chamber on the east was also warmed, but by a pillared hypocaust, the stone *pilæ* of which are in place, the situation of the furnace being indicated by brick instead of stone piers. These brick piers show that the furnace must have formerly existed at what is now the south-east corner of the apsidal chamber at *b*, clearly proving that when the latter was built the furnace of the pillared hypocaust was blocked up.

But to return to the little court. By a reference to the plan it will be seen that rather more than a third of its northern end is occupied by three tanks, a rectangular middle and two smaller side ones, each with semicircular ends. The middle tank (6) measures 12 feet 5 inches by 11 feet 5 inches and is 3 feet 3 inches deep, the side tanks are each 4 feet 8 inches by 4 feet 1 inch, and the same depth as the middle one. All three have steps down into them, and the large tank has a floor of stone slabs. An opening for a pipe through the back wall of the court above the westernmost tank showed from what point water had been supplied, and the hole for another pipe is to be found in the wall between this tank and the middle one, thus making it clear that one tank could be emptied into the other. The masonry of these receptacles and the floor of the court are covered by a thick coating of cement of the usual kind employed for cisterns or baths.

When the court was built, or soon after, an addition was made to its western side of two small chambers side by side (7, 7), and communicating with the court by a narrow doorway, each having a semicircular western end, filled by shallow tanks perhaps something over 2 feet deep. They each measured 4 feet 2 inches from back to front, and 8 feet on the straight side. These semicircular tanks were jacketted with flue tiles and built upon hypocausts, the furnace of which was in a sunken chamber directly behind the building (8). The furnace was of some size, and besides maintaining a considerable heat in the hypocausts could have been utilised for heating boilers directly above it.

Thus much for the actual constructions. The question remains for what purposes were they erected. The only previous suggestion as to their use which has been made was one by Prebendary Scarth in his paper referred to. He supposed them to have been the baths for the slaves attached to the villa. But there are objections to such a view, in that baths for such a purpose are unknown in the remains of Roman villas in this country, as far as can be ascertained; moreover, the arrangements are not those of a bathing establishment, and the choicest position in the site and in so prominent a place would scarcely be chosen

for such a use. It has also already been mentioned that a complete set of baths exists at the end of the western side of the villa and in close proximity to the constructions just described.

The likeness of the tanks in the court to those of the Pompeian *fullonica* is obvious enough, though nothing is to be found resembling the masonry treading places of this latter. These, however, may have been of wood, as appears occasionally to have been the case, as may be seen in the painting in the House of the Vettii already noted, and perhaps in the sepulchral monument to a fuller at Sens previously mentioned. They could very well have been placed either in the courtyard or possibly in the adjoining apsidal chamber, to which a break in the wall of the court, which may be ancient, gives access. For drying and storage, the chamber with the three-sided apse may have served, and the large hall have been utilised for carding and drying also. The large courtyard of the villa may also have been thus used in fine weather, when the articles could be bleached in the usual way by exposure to sun and air, besides which chambers enough could be found for the process of sulphuring.^a

So far the remains seem to be those of an ordinary fullery, but the heating chambers and tanks beside the small court perhaps point to another use for the building, viz. that of wool scouring, in which heated fluids are needed. The modern practice for the cleaning of raw wool requires that it should be worked about in the scouring liquor for a short time, then drained and thrown into a cistern and washed two or three times, and this process appears to have been in use for a considerable period.^b It is quite possible it may have been employed in Roman times and practised here at Chedworth. The apparatus seen on the spot would suit both fulling with cold or scouring with hot detergents.

It has been noted that the constructions in which the processes described are believed to have been carried on did not form part of the plan of the original building, but were intruded into it. In this respect the parallel between the Pompeian *fullonica*, originally a private house, and the Chedworth villa is complete. It might almost be believed that the mansion, with its fine mosaic floors,

^a A stratum of fuller's earth is said to have been discovered in the hills round the villa. See *Journal of the British Archaeological Association*, Proceedings of Cirencester Congress, 1869, xxv. 402.

^b At first sight the heated tanks suggest dyeing, but this requires a greater heat than could be obtained by means of a hypocaust. The dye should be boiling, but some dyeing may be effected at a less temperature.

well appointed baths, and handsome rooms, had passed at some late period into the hands of some owner who, more intent on trading operations than on the amenities of life, had converted the finest chambers of his acquired dwelling into workshops, moved partly to do so by the fact that they were in a ruinous condition at the time of his entering into possession.

The next site offering features similar to those discoverable at Chedworth is that of the villa in the park at Titsey, in Surrey. (Fig. 1). It was first

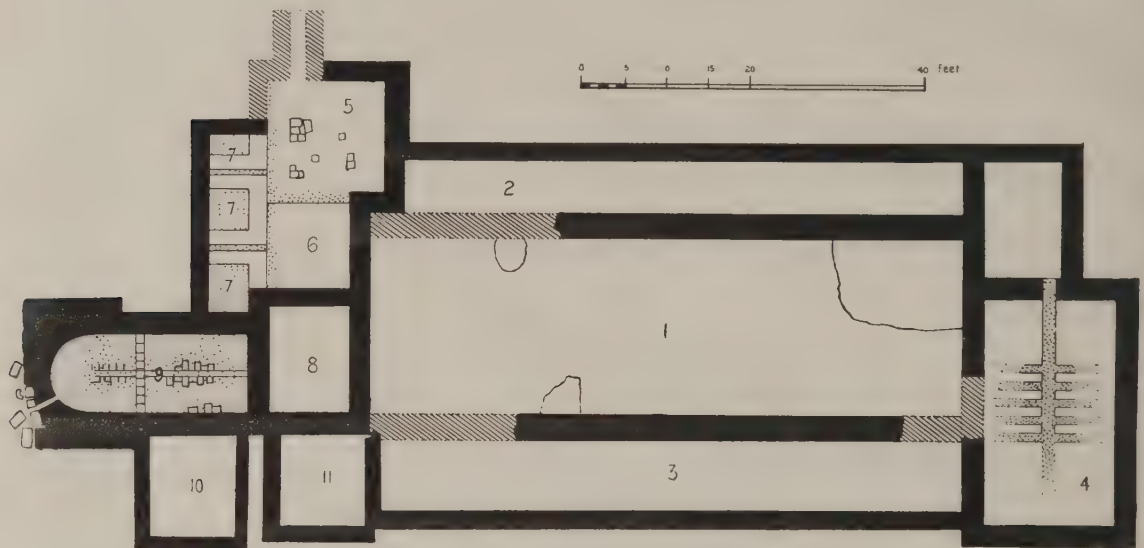


Fig. 1. Plan of a Roman building in Titsey Park, Surrey.

discovered in draining the park in 1847, and subsequently excavated in 1864-5 by the late Mr. Granville Leveson-Gower, but not completely worked out until 1893. Unlike the Chedworth villa, the house was not one of the first class, but it was like it in another particular, in that it showed itself to be a habitation in which considerable modifications had been made for purposes of carrying on a craft. The site is on low ground traversed by a stream or feeder of the Medway, and the water lies at a very slight depth from the surface of the soil. The building, which stood east and west, was not a large one, being only 125 feet long by 60 feet wide, and it belonged to that class now known as corridor houses. The whole body of it between the main walls showed when excavated only an empty space (1), with here and there patches of tile tessellation. There

can be little doubt but that this space was cut up into several divisions by partitions, and that the fragments of mosaic marked the floors of different chambers. Also from the thickness of the main walls (3 feet) it may be concluded to have had an upper story. Two corridors, one on the north (2), one on the south side of the house (3), furnished means of communication with the different rooms, and with a group of chambers at each end of the building. The eastern group consisted of a large room (4) heated by a channelled hypocaust, with the stokehole and furnace. The western group consisted of a large room (5, 6) originally furnished with a pillared hypocaust, and other chambers (8-11); the first arrangement of which cannot now be discovered from the fact that these chambers have either been swept away or modified at a later time. A reference to the plan will show that the large chamber (5, 6), which is 9 feet 6 inches wide by 23 feet long, with a bay 4 feet deep by 12 feet long projecting from its eastern side, had originally a large furnace at its northern end to serve the hypocaust. The changes made in its construction to fit it for the supposed fulling workshop appear to have been these. The hypocaust was removed, leaving only the tile floor on which the *pilæ* had stood. A platform (6) 4 inches higher than the general level of the floor was laid over a space rather less than half of the room at its southern end, and the west wall was pulled down, and three small compartments (7, 7, 7) with two dividing walls (each 3 feet $9\frac{1}{2}$ inches wide) between them were inserted on this side of the chamber. The compartments are rectangular, and all of the same length from east to west, viz. 4 feet 8 inches. The first and most northerly is 2 feet 3 inches wide, the next 4 feet 8 inches, and the last 5 feet 4 inches. They are all 3 feet $1\frac{1}{2}$ inch deep from the surface of the masonry divisions between them, but it is not possible to say what was the original depth. The present bottom shows rammed flints and gravel, and it is quite possible that in the excavation here the original bottom in each compartment has been destroyed by the deep digging.

The upper surface of the divisions between the compartments may have been about 2 feet above the floor level of the large chamber. This surface of these divisions has a channel in each, $7\frac{1}{2}$ inches wide, floored with tile, which falls with a somewhat rapid slope from the wall at the back of the compartments towards the floor of the chamber (5, 6). To complete these details, it may be added that none of the masonry faces shows any traces of plastering, but as the walls have been exposed for many years to the action of the weather this is scarcely to be expected.

Directly south of the room just described is another (8) of nearly the same width, but rather longer than wide. At right angles to this and projecting westward is a third chamber with an apsidal western end (9), 21 feet 10 inches long by 9 feet wide. This, in its full length and breadth, is filled by a tank 2 feet in depth, paved with tile, with a gutter down the centre of it. The tank is divided into two by a thin dwarf wall of brick at 9 feet 10 inches from the west end, the gutter passing through this wall and continuing on to find an exit on the south side of the apse. The channel of this exit has been worked in a fragment of the massive coping of some structure of heavy character,^a owing probably to the ground at this spot being boggy and unreliable. This is also shown by the ruinous state of the building hereabouts.

Attached to the south side of this tank-room was a small chamber (10) with thin walls, and there was another (11) detached from it by a narrow intervening space and lying south of (8). This last is at the end of the south corridor of the house, from which it may have been entered. The walls had been painted red.

The large chamber at the east end of the building (4) was 25 feet 6 inches long by 14 feet 10 inches wide, and is of interest as containing a channelled hypocaust of rare and peculiar character. It consists of a long central flue, 1 foot 3 inches wide and 1 foot 9½ inches deep. From this, at right angles and on each side, ten smaller flues ran towards the walls of the room, which, however, they did not reach. These subsidiary flues are not continued at the same level as the main one, but slope upwards to the level of the floor of the room. The ten ducts, five on each side of the main one, do not occur at regular intervals in the whole length of the room, but are grouped in the middle of the floor space. The flues themselves are 10½ inches wide, the divisions between them being each 1 foot in width, and the latter are built up of tiles laid in pink mortar, the whole construction being covered by the same kind of cement. Owing to the ruined condition of the southern part of the chamber, it is impossible to say how the principal flue terminated, but it may be conjectured that there was at its end, against the south wall, a pipe in the masonry serving as a chimney to carry off the smoke and cause the necessary draft. The furnace or stokehole to this hypocaust is to the north. With the reason for the peculiar construction here detailed we will deal further on.

^a Some stones from this have also been used in the foundations of the apse.

To return to the group of western chambers. We may perhaps see in 5-6 a workshop where the principal part of a fuller's business was carried on. The compartments 7, 7, 7 may well have been the treading places, though they are of larger size than those of the Pompeian *fullonica*, with which they may be compared. It may be objected that they have now no plaster lining and could not therefore hold water, but there is no reason for believing that they were not lined with wood, in this case presenting the appearance of comparatively shallow troughs. Another objection might be made that they were too deep for treading places, but there is every probability that all the compartments have been dug down too far in the process of excavation. The channels in the surface of the masonry separating the compartments or tanks, having regard to their inward slope, were probably constructed to serve as drains to carry off the slop running from the articles laid upon them or dragged from one trough to another in the process of cleaning. As there is no sign of a masonry drain, a wooden gutter fixed in the floor along the front of the tanks probably carried away the fluid running from the masonry channels. It is probable also that the raised floor (6) existing in this room served for the beating and scrubbing of the larger articles with the same detergents as were used in the tanks. It may be compared with the floor of No 3 in the Pompeian *fullonica*, but the curb of this latter is wanting. It may, however, have been of wood, and the space between the raised edge of the floor and the angle of the wide bay of the room suggests its probable width.

Whether hot water or any other heated fluid was employed it is not possible to say. The walls of the furnace of the former hypocaust at the north end of the chamber would have upheld a boiler of some size.

As for the tank or tanks in No. 9 their use is clear enough. The gutter or channel down the middle would facilitate their being cleaned out when the clay with which the cloths were charged in the fulling process had formed a sediment at the bottom, and the water had become too turbid in the washing or rinsing process. These tanks have been called baths, but it would be difficult to find baths in any Roman villa in this country either so large, or for cold baths so shallow. The whole arrangement of this end of the house has no resemblance to any establishment of Roman private baths, a typical example of which may be seen, as already observed, in the Chedworth villa.

One further requisite has to be accounted for, viz. a drying room. The drying of the cleaned and fulled goods had to be done either by exposure to the

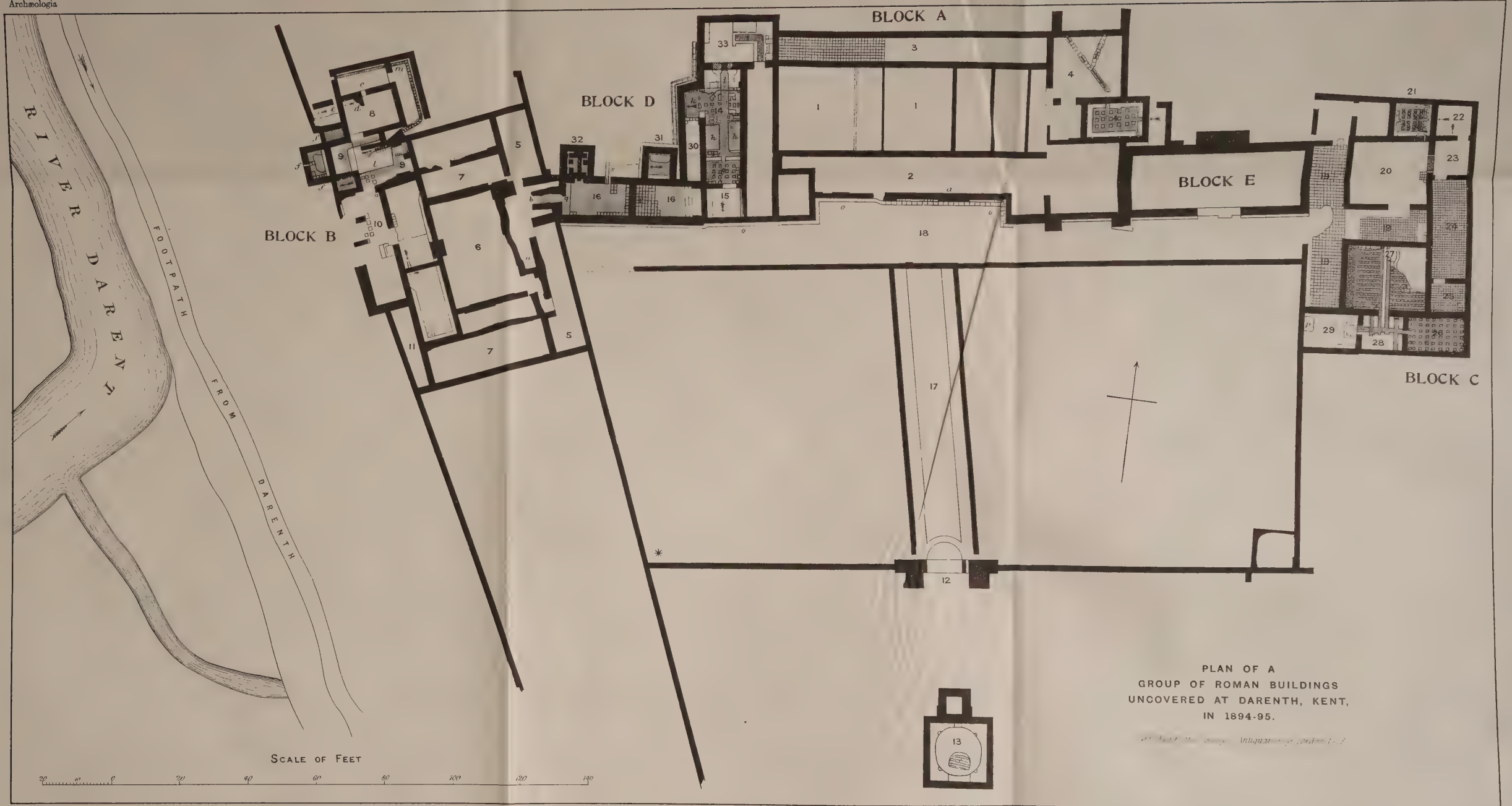
open air or by subjecting them to artificial heat, or probably in both ways. The wide flat space of ground about the house afforded ample means for the former process, and no doubt around the house, either on racks or spread on the turf, the goods were dried, and in drying became bleached also. Looking, however, to the uncertainty of our climate, these natural means must have been supplemented then as they are now by artificial ones. It is therefore not unlikely that the goods fulled at one end of the building were dried at the other in the chamber (4) already described, and in the following manner. It was mentioned in the account given of the channelled hypocaust of this chamber, that the heating flues were grouped in the middle of the floor and sloped upwards from the main flue towards the walls, which, however, they did not reach. Their upper ends, in fact, would have emerged from the floor before touching the walls. It is thus evident that no wall flues existed in this room, and a substitute has to be found for them. This it may be conjectured took the form of a low hollow bench constructed of brick, built against the foot of the walls and running all round the room, this heated bench acting in the same way as the coils of a modern stove. Its top could be utilised for drying the smaller articles, while the larger ones could be suspended above it from swinging poles from the roof, such as may be seen in the paintings of the Pompeian *fullonica*. It appears that the room in question had been converted at some time to the use here indicated, by the construction of the hypocaust described, which was one of very unusual form, and calculated to afford considerable heat. Tessellæ found in the rubbish and fragments of painted plaster from the walls indicate that at one period it had been one of the best rooms of the house.

The places where carding and cloth-shearing, etc. were carried on cannot be identified, as such processes leave no definite traces, and any room of sufficient size might be employed for bleaching the goods by means of the fumes of sulphur. These additions to the main work of fulling were no doubt performed in every fullery. The main body of the house was large enough to furnish rooms in which the processes named could be carried on, and not only these, but a sufficient supply of chambers for the accommodation of the master of the establishment and his workmen, if it be taken for granted that the house had an upper floor over the greater portion of its extent.

Thus much for the remains at Titsey. We will now pass to the consideration of a much larger establishment of the same kind.

The valley of the Darent in Kent has been known for a considerable period to





PLAN OF A
GROUP OF ROMAN BUILDINGS
UNCOVERED AT DARENT, KENT,
IN 1894-95.

contain traces of Roman buildings, and some years ago a mosaic pavement was partly uncovered at a spot called South Field on Court Lodge Farm, between the villages of Darenth and South Darenth.

In 1894 two gentlemen residing in the neighbourhood, wishing to see what further remains this field might contain, had experimental trenches made, which convinced them that they were on the brink of considerable discoveries, and in consequence they called to their assistance the aid of Mr. George Payne, F.S.A., to whom was entrusted the thorough exploration of the site, which was carried on from November, 1894, till June, 1895. The results of that exploration were published by Mr. Payne in *Archæologia Cantiana*.^a

The remains disclosed by these excavations mainly lie on the gently sloping western side of the valley, roughly at a right angle to the clear stream which fleets onwards to its junction with the Thames at Dartford some few miles away. They stretch upward in a long line from close upon the river towards an ancient way called the Packway, which runs along the top of the slope in a parallel direction to the river. A glance at the plan (Plate LVIII.) will show that the main constructions stand in a line running east and west, and that they form three distinct bodies of building; the middle one being joined to the other two, on the west by what Mr. Payne calls a swimming bath, on the east by a long hall. An ambulatory covers the whole front between the eastern and western blocks of buildings, and in front and south of all is a courtyard divided into irregular halves by a building called by Mr. Payne a large hall. South again and in line with the end of this hall is a square building with a smaller massive square rectangular projection on its northern side. Long lines of walling, the remains of farm buildings, continue still further south. Of these it is not here necessary to say anything.

The group of constructions just described has been taken by its explorer to be a single building coming under the usual term *villa*, and this description, as far as the latest period of its existence is concerned, is doubtless a correct one, yet a careful examination of the remains seems to show that the buildings are not of one date, and that they had a growth and development which at first sight might not be detected.

^a Vol. xxii. 49-84. I must here acknowledge the courtesy of Mr. Payne in permitting the reproduction of the plan of the remains accompanying this paper. My thanks are also due to Mr. R. Marchant for valuable information respecting the site.

For convenience of reference the central building may be named A, the western B, and the eastern C, the connecting links D and E. (See Plan, Plate LVIII.) With regard to A, it may be seen at a glance that in all essentials its plan is that of a corridor house of no uncommon type, fronting south, and consisting of a large number of rooms (1, 1) lined by corridors back and front (2, 3), and with a group of chambers at either end. The entrance was in the middle of the southern corridor at *a*, between two long sets off. It is marked by the traces of a tiled threshold. The thinness of the main walls precludes the likelihood of an upper story over most of the building. The division of the body of the house into chambers by means of timber partitions is a feature worthy of note. The traces of such partitions are rare, though divisions of the kind must often have been employed. Some of these chambers were paved with brick tessellation, as was the case in the similar apartments of the Titsey villa, which should be compared with this house, for the likeness in plan and dimensions of the two buildings is striking. The rooms warmed by hypocausts (4, 4) scarcely seem sufficient in number considering the size of the house. There are but two at the east end, for the warmed chamber at the west end is of a later time in the history of the building.

Far less easy to read than the plan of A is that of B, not only on account of the very ruined state of the foundations, but also on account of the alterations that have been carried out in it. The plan shows a house of the courtyard type, set with its back to the river near by. A corridor (5, 5) ran the whole length of the eastern side. At a point in this corridor about opposite to the south-west corner of Block A was probably the entrance, set between piers at *b*, and with walls on either hand forming a passage way which conducted into the central court (6). Corridors at the north and south ends of this court (7, 7) afforded means of access to the various chambers of the house, which appears to have been furnished with baths, but of a somewhat abnormal character. These lie in a group of rooms at the north-west angle of the building and partly projecting from it northward. The first of these rooms (8) may have been the *caldarium*, for although the piers of the hypocaust have been swept clean away the bases of the wall flues remain. There is a stokehole at *c* in the northern wall, and close to it a mass of flooring (*d*) on which the dwarf supports of the hot bath doubtless stood, while the position of the bath itself is indicated by a drain (*e*) through the west wall. Passing through a doorway in the south-western angle of this chamber another (9, 9) is reached rather longer in size than (8), and very irregular in shape. The western half of the

room is completely filled by three baths (*f, f, f*), the arrangement of which may be seen by reference to the plan. These baths were floored originally with tile tesserae subsequently covered with a course of tiles. The sides were thickly plastered with pink cement, which had been coloured a deep red, the colouring it is to be presumed ending well above the water line. The baths had no hypocausts beneath them, and were therefore, if baths, intended for cold bathing. Mr. Payne considers that the chamber in which they occur was originally warmed by a hypocaust. This seems, however, somewhat doubtful. Next to (9) and south of it is another room of considerable proportions (10), which had possibly been divided into two. In the north half were found traces of a hypocaust, the furnace of which was perhaps in the western wall now destroyed.

To complete the account of the house it may be added that loose tile tesserae were found in the northern half of the long eastern corridor (5, 5), and that in room (11) fragments of richly coloured plaster were turned up.

From the east and west walls of Block B walls continue southwards up the valley forming different enclosures. The easternmost of these marks the boundary, on one side, of the large court or space of ground in front of the middle block, the corresponding boundary wall being a prolongation of the west wall of Block C. The third wall joining these two and completing the enclosure is roughly parallel to Block A. In about the middle of it was a gateway with massive piers (12), which gateway stood, not directly opposite the entrance doorway of Block A, but somewhat eastward of it. It may be that the slope of the site rendered this arrangement necessary in order that the approach to the house across the court might be kept on a level, a matter of importance, as will be seen later on.

As to Block C, at the time being treated of it probably did not exist, and the same may be said of D and E.

The next stage in the story of the buildings will show considerable modifications and additions to fit them for the purposes of a fullery. The middle block was retained as a habitation for the master of the place, while Block B, originally a house as previously indicated, appears to have been converted into workshops, and possibly in part used as a dwelling for the workmen on the establishment.

The first requisite of a *fullonica* would be the water supply. The existing buildings although near a river were, however, not so near as to render a supply from it easily obtainable, and there seems no trace of such supply from the stream itself. But there exists a small backwater running from it, parallel

with the path passing the ruins, the end of which points in an easterly direction towards the enclosure fronting the buildings, and there is a report current in the neighbourhood that a spring ran down to the river from the higher ground, from which it might be inferred that springs then as now were to be found in the side of the valley. It seems therefore not impossible that the square building (13) in front of the gateway to the enclosure before Block A (it is less than 36 feet from it) may have been a conduit or well-house, enclosing a spring copious enough to form the water supply of the fulling work. When the earth within the square building was dug out, "a large circular earth pit remained," to quote the words of its explorer, "13 feet in diameter and 4 feet deep. At the bottom lay in a tilted position a huge mass of masonry, semicircular in form, consisting of portions of tiles bedded in pink mortar. The mass measured 5 feet 9 inches both ways and 3 feet thick. On the underside several large flints adhered to the mortar, showing that it had originally been laid upon a flint foundation." (Plate LIX. fig. 1.) From this description one might almost draw the conclusion that the large fragment of masonry thus disclosed had formed part of the lining of a reservoir, the tiles set in pink mortar being the face of a backing of flint rubble. The little square adjunct with thick walls was doubtless an external watering place for cattle or horses fed from the reservoir within, as a passage for a pipe existed in the wall between it and the larger chamber.

Thus far one requisite for the craft of fulling may have been provided for; the next point is to see how that craft was carried on on the site. Turning to Block A, the long chamber (14) will be seen to be partially filled with the remains of a hypocaust. (Plate LIX. fig. 2.) Going from south to north, first comes a rectangular space *g* containing *pilæ* of the usual kind and bounded by a dwarf wall with an opening in it. Beyond this, with a broad interval, come two beds of chalk masonry (*h*, *h*) sloping upward from a wide space of floor to a height of 1 foot 2 inches against the walls. What remains on the west side is 7 feet 3 inches long by 4 feet wide, that on the east 9 feet long by 3 feet 6 inches wide, the floor space between them being fully 2 feet 6 inches wide. The rest of the space, from the end of these two beds to the northern end of the chamber, or rather where the furnace passage opens into the hypocaust, is filled with *pilæ* somewhat irregularly disposed. This peculiarity, however, must be noted, that the sloping beds appear at one time to have been continuous down both sides of the chamber. On the west side a large part of the structure has been swept away, except a trace at the northern end, but on the east side it continues with



Fig. 1. Darenth Villa.—Conduit or Well-house.



Fig. 2. Darenth Villa.—Hypocaust in Room 14 (Block D), looking north.

partial breaks, the *pilæ* being built into the northern half of the sloping surface.^a The wall which forms the west side of the chamber has what looks like a wide opening towards the north in order that the hypocaust at this end of the room might be carried quite up to the main wall of the house.

Now why should a hypocaust be constructed in such a singular manner, with sloping banks, which would render the support of the *suspensura* difficult, and practically diminish the space for the heated air and cover the starting of the wall flues? The question is answered by the fact that in one part the *pilæ* are planted in one of the sloping beds described, and that in two places, if not in more, the beds have been channelled to allow the heat to reach the wall flues at those points, thus clearly showing that the construction of the heating apparatus was a makeshift adapted to arrangements which had originally been made for another purpose.

Originally (14) seems to have been one large chamber, of somewhat irregular form, with a rectangular alcove at its northern end of lesser width than the rest of the room. But the chamber being too large for the fuller's purposes, the floor of the part south of the alcove was sunk something over a foot, so as to form a large shallow tank. This tank was restricted in width to that of the alcove north of it, leaving on its western side to serve as a working platform a long strip of the original floor. At the south end of the sunken space thus formed a quadrangular portion (*g*) was parted off by a dwarf wall, and the remainder had the sloping banks, one on each side (*h, h*), built up in it, banks and floor between them being lined with tiles, of which some still remain. Practically the main part of the floor of the room had been converted into a large shallow trough with widely sloping sides, while the portion at the south end became a shallow tank. The shallow trough was probably the great treading place of the *fullonica*, in which the larger materials to be fulled could be trodden in the liquid detergent filling its lower portion, and beaten and scrubbed when pulled up over the sloping sides. The

^a It should be observed that no trace of *pilæ* appear upon the beds in the southern half of the hypocaust. It is conceivable that this may be accounted for as follows. Dwarf walls of rubble forming a passage possibly as wide as the furnace at the northern end of the chamber may have been built on the level floor between the sloping beds for the length of those beds, and the pockets behind them then filled up with unmortared material, the whole being floored over. The heat from the northern pillared portion of the hypocaust would thus be conveyed to the southern pillared section, and if the floor over the intermediate passage was thin, considerable warmth would be obtained from it.

shallow tank at the south end would receive the articles for a first rinsing. The existence of a sinking in the flooring at the northern end of the working platform referred to may be inferred from the fact of a drain still existing there 1 foot above the level of the present hypocaust floor, and here were probably placed the tubs for treading the smaller articles, the drain mentioned carrying off the slop and splashings caused by the men working in the tubs.

The work of conversion and addition thus begun was continued by the construction of the great tank (Block D, 16, 16). This was probably intended to serve both the workshops in Block A and those in Block B, it was therefore made to run between the two houses. It was floored with bricks, and the sides were thickly plastered with the usual pink cement.

The western side of the little chamber (15) of Block A, communicating with the treading tank in (14), was pulled down and steps built, also thickly covered with cement, leading down into the eastern end of the tank.^a (Plate LX. fig. 1.) The western end, which appears to have blocked the main entrance of House B, judging from the amount of masonry still remaining about it, may have had a similar series of steps. Possibly a new doorway, some yards south of the old one, was pierced in the wall of House B, giving entrance from the long southern corridor (5).

The traces of alterations for the needs of the fullers are if anything more apparent in Block B than in Block A. It is impossible to say what processes were carried on in Room (10), but it is clear that the hypocaust formerly existing had been swept away.

The next chamber (9), containing the three cold baths *f, f, f*, was, Mr. Payne thinks, warmed by a hypocaust, and the present shallowness of these baths lends colour to this supposition, but if there ever was a hypocaust here, like that in (10), it has been completely cleared away, and the three baths reduced to a shallowness which would quite unfit them for bathing purposes. (Plate LX. fig. 2.) The middle and largest one, 8 feet 3 inches by 4 feet 2 inches, has only a depth of a foot, the smaller ones are a few inches deeper. The tessellated floor of each has been covered by a layer of coarse tiles. In front of these altered baths and against the north wall of the room was a patch of chalk flooring (1) 8 feet 6 inches by 5 feet 2 inches, and 1 foot higher than the rest of the floor. In it and against the north

^a A drain in the south wall of this little chamber seems to show how wet the floor must have been made by the transfer of the dripping cloths from tank to tank.



Fig. 1. Darenth Villa.—Tanks in Room 16 (Block D).



Fig. 2. Darenth Villa.—Tanks, originally baths, in Chamber 9 (Block B).

wall is the start of a well-constructed drain (*m*), 10 inches wide, with sides of flint masonry and broken tile. This drain passes through the north wall, is carried in a curve to the east wall of an adjoining passage, and then turning westward lines the foot of the north wall of the stokehole and woodstore of Room 8, finally finding an exit through the north wall of the stokehole. The portion of its course through this latter room has a rapid fall towards its exit.

It may be conjectured that the receptacles mentioned were the original baths of the house, lessened in depth by the loss of the suspensura of the hypocaust, if a hypocaust ever existed in Chamber 9, or otherwise cut down to fit them as treading places. Possibly the raised chalk floor of this room had a curb round it, so that some of the larger articles could be cleaned upon it, and this seems a probable view, for the large drain running from it, just described, would carry off any quantity of the fluid used upon the floor, whilst its rapid fall would facilitate the flow of the cleansing fluid thickly charged with fuller's earth, or the water used in rinsing. Some construction like a bin or trough, 3 feet 9 inches long by 6 feet wide, is to be seen at the east end of the floor in question. It may have been a receptacle for the cleaning fluid used here.

The ruined condition of the remains prevents any opinion being formed of the uses of the other chambers in this block or house. At *n* the masonry might possibly indicate the long shallow trough of a treading place, but nothing approaching certainty can be deduced from it, and it can only be mentioned before passing to other matters.

It seems either that the great tank in Block D was not found sufficient for the washing purposes of the *fullonica*, or that not only fulling but the simpler process of plain washing also was carried on on the site. To supply either requirement further provision was largely made by the construction of a tank 78 feet long by 10 feet wide (17). This extended from the gate (12) (which it must be presumed was now blocked as far as traffic through it was concerned) to the corridor (18) which lines the whole of the south face of the buildings. The sides and ends of this tank were formed of a mass of flint rubble, which at the sides was 4 feet wide, the rubble being faced internally with solid brickwork about 1 foot thick, showing a face something over 3 feet deep, the depth of the tank. What the bottom of the tank was made of, whether it had a brick floor like that of Block D or was lined with wood, did not appear. In all probability the flooring was of brick based on a stout bed of clay, and the bricks were removed when subsequent alterations took place, which will be noted further on. On the outer line of the flint rubble

backing the brickwork of the tank was built on either side a wall, 1 foot $5\frac{1}{2}$ inches thick, leaving a gangway down each side of the tank with a width of 3 feet 6 inches. Whether these walls were carried up to support a roof over the tank and afford shelter to the workmen in bad weather, or whether they simply formed a base for posts performing the same office can only be guessed at. Perhaps the masonry was carried up between the posts at intervals only, so as to allow in places of a less narrow access to the centre than the gangway alone would give. If the tank was roofed over as here suggested, no doubt the upper part of the gateway served as a gable to it at the southern end. At the gateway the tank ends in a narrow semicircle, the space between its edge and that of the sill of the gateway being filled by what may have been a cistern, but for what use is not clear. (Plate LXI. fig. 1.) A deep channel in the threshold of the gateway evidently afforded room for the passage of the supply pipe to the tank from the conduit house about 36 feet to the south. The reason previously mentioned for placing the gateway of the enclosure not exactly opposite to the entrance doorway of the house, viz. that on account of the slope of the ground an oblique direction was adopted for the approach in order to obtain a level way, was also the reason, as a minute's consideration will show, for the same oblique direction being given to the tank, the necessity of constructing this on a level being obvious.

Since the excavation of the site another large square construction has been found at the south-west corner of the western courtyard, at * on the plan. It may have been another tank intended to receive the overflow from the large tank or to contain the rain water from the roofs of the different buildings.

Yet one other division of the buildings on the site still remains to be described, viz. Block c. This is situated at the east end of the long southern corridor, and is tied to Block A by a large hall (Block E), to be treated of later on. At first sight Block c might be taken for a house, but further examination of its plan will show that it resembles one neither of the corridor nor of the courtyard type and that it is exceptional in its arrangements. It had a larger number of heated chambers than any Roman building erected for habitation in this country is known to have possessed. Out of the twelve chambers into which it was divided two were the furnace rooms of the hypocausts, and all the rest but two received heat in a greater or lesser degree. Such a state of things, taken with the unlikeness of the place to a dwelling, leads to the conclusion that it was built for quite other purposes than habitation, though it was subsequently adapted for such purposes. What were they? The methods and places used for cleansing,



Fig. 1. Darenth Villa.—South end of long tank (17).



Fig. 2. Darenth Villa.—Hypocaust in Room 14 (Block D), looking south.



Fig. 1. Darenth Villa.—Hypocaust in Chamber 27 (Block C).



Fig. 2. Darenth Villa.—Hypocaust in Chamber 27 (Block C).

washing, and fulling the articles sent to the *fullonica* have been already described, but the parts of the establishment in which the further processes of drying, carding, and bleaching them have not yet been noticed, and these have yet to be accounted for. It is possible, therefore, that Block c may be where the further processes named have been carried on.

The cloth fullled in the tanks described could have been disposed on racks for drying and bleaching in the open air in the ample courtyards, and if needed, as in rainy weather for example, could have been hung to drain and dry in the wide corridor (18), which was now erected and which, covering the front of the building, served as a means of communication between its different sections. The original drain *o* in front of Block A, made before the great corridor had as yet an existence, was allowed to remain, and may not only have served its original purpose, but may also have been utilised for clearing the floor of the moisture dripping from the cloths hung up fresh from the tanks. The smaller articles of dress, those which were more immediately required, would have found a place for the same reason in the ample corridors (19) of Block c, where traces of floor drainage are also to be observed, there being a gutter along the west wall of the large western corridor, with a rough receptacle at *p*. As to the identification of the drying rooms there can be no difficulty. Chambers 20, 23, 24, 25, 26, 27, and 28 seem all suitable for the purpose. No. 20, which had a cement floor, was apparently warmed, according to Mr. Payne's account, by a flue running round the floor, presumably at the foot of the walls. This flue may have received its heat from floor passages in 23 communicating with the furnace situated in 22, which furnace heated Chamber 21 also. Chamber 20 measured 22 feet 4 inches by 17 feet 2 inches. To the south of it and divided from it by corridor 19 was another (27) of nearly equal size (21 feet 7 inches by 17 feet 6 inches). This was warmed by a hypocaust of peculiar construction. (Plate LXII. figs. 1 and 2.) A dividing wall of brick starting from the furnace in 29 and running north and south divides the heating chamber into two nearly equal divisions. On each side of this is a duct 1 foot wide, from which start at right angles rows of walls formed of chalk blocks, the walls being from 6 to 9 inches apart. At the west end of the walls in the western half two rows of brick *pilæ* were substituted for the chalk blocks. Probably the original intention of the builders had been to construct a hypocaust of the usual kind, but bricks running short, or for motives of economy, chalk blocks were substituted. The floor of the chamber appears to have been only 8 inches thick, so that the amount of heat derived from the floor

was probably considerable. Only one wall flue was found, possibly owing to the ruined condition of the walls. A furnace of considerable size extending beneath Room 28 served not only Chamber 27, but Chambers 24, 25, and 26 as well. The stokehole and wood-store was in the compartment 29.

It is not possible to define the purpose to which each and every room in this block was devoted; chambers containing the presses and for carding can only be guessed at. Perhaps it may be possible to call Room 21 the bleaching room, for the reason that it has a splayed opening 2 feet wide in its north wall, the sill of which is only 3 feet 3 inches above the level of the floor. Such an opening may have been of service for ridding it of the sulphur fumes after the articles hung here to be bleached had been submitted to the process for a sufficient time. There was a hypocaust beneath the floor of the room, the stokehole of which was in 22.

With the exception of one or two points presently to be mentioned, all traces have been noticed that can be connected with the craft of fulling, which it is the endeavour of the present account to show was practised on this site, but as certain alterations and additions appear to have been made in the *fullonica*, obscuring its character and rendering its remains somewhat puzzling to unravel, a certain amount of further examination of these remains is needed to make them clearly understood. The changes effected were for the purpose of creating a mansion at the expense of the *fullonica*, or restoring the principal part of the group of buildings to the uses exclusively of a dwelling, leaving Block B to the fullers. The alterations made for this purpose must be now detailed.

One of the requisites of a Romano-British house of the first class, or even of the second class, is a set of baths. With those Block B as a separate house was furnished, but in the house Block A no such provision appeared. It seems that the fulling works in the last named block were now sacrificed to form such an establishment.

In Chamber 14 a hypocaust of somewhat remarkable character was made out of the treading tanks. (Plate LXI. fig. 2.) Its construction has already been described, but a few more words must be added here respecting it. When the change was made from tank to hypocaust a wall was raised on the edge of the working platform, thus narrowing the latter and converting it into a passage (30), entrance to which from (14) was given by a wide opening. At the same time a furnace for the hypocaust was made in the flooring of the alcove on the north, with its mouth at *i* in Chamber 14. The room was possibly lighted by a large window in the wall opposite to the opening just mentioned, as a pane of glass, perhaps one



Fig. 1. Darenth Villa.—Cold Bath (31) and Hot Bath (32) in Block D.



Fig. 2. Darenth Villa.—Stoke hole (b), etc. in west end of Block D.

of the panes from its glazing, was found in the gutter outside at this spot. The chamber thus altered may have been the *apodyterium* of the baths. The small compartment 15 was next modified. When dug out in the recent excavations it was found to have had a tessellated floor of brick, probably laid at an early period. From this floor, as has been noted, steps descended into the fuller's tank facing Block D. A wall was now built across these steps, and the little room re-floored at a level of 1 foot 5 inches above the original one, this latter level being that of No. 14, the *apodyterium*.

Block D was completely transformed. The large tank (16, 16), doubtless originally having walls and a roof, was divided in half by a wall. The eastern half, after the bottom had been deprived of most of its brick paving, was filled up, and a cold bath (31), 6 feet 3 inches by 7 feet 3 inches, with a step down into it, built upon its northern side. (Plate LXIII. fig. 1.) At the east end of the chamber thus formed, and which may be called the *frigidarium*, it is probable a small doorway led into the *apodyterium* through the passage on the west side of that apartment. The western half of the tank received other treatment. A pillared hypocaust was constructed within it, the *pilæ* of which together with most of the brick paving have been swept away, the steps at the western end down to the tank were in part destroyed, and a rough furnace at *q* for the hypocaust made through them. On the north side and close to the western end by the furnace a hot bath (32), of nearly similar size to the cold one just mentioned, was built, with its floor supported on *pilæ*. The supports for the hot water boiler over the furnace are clearly to be seen. (Plate LXIII. fig. 2.) The arrangement is that of a small but complete *caldarium*, which must have been entered by a doorway in the wall *r* dividing it from the chamber next it, so nearly corresponding to it in size. The hole *s* in the northern wall for the passage of the drain from the tank before the alterations may have been left open after those alterations had been effected. It would have served to increase the draught from the furnace of the hypocaust. Considering therefore the changes thus made, it will be seen that the house (Block A) had now been fitted with the regular set of baths, *caldarium*, *frigidarium*, and *apodyterium* or *tepidarium*, all complete.

But the changes in the establishment did not end here. In Block C the heating arrangements were only retained in the Chambers Nos. 26, 27, and 28. The doorway into the small room (21), conjectured to have been a bleaching chamber of the *fullonica*, was blocked up. The furnace room (22) which had served the hypocaust of this room and of those of Chambers 20 and 23 was filled

in, and the hypocausts in Rooms 24 and 25 had not only been filled in but floored over with tiles, as indicated in Plan IV., and the walls adorned with decorative painting, fragments of which were visible when they were excavated.

The change in the condition of affairs was still further emphasised by the possible restoration of the old gateway of the courtyard to its original use through the well-ascertained fact of the filling up of the great tank (17). The whole of this latter at the time of the excavations was discovered to have been filled with a mass of clay, on which had been laid a bed of yellow concrete 4 inches thick at the same level as the floor of the great corridor. If the tank had been roofed as conjectured, the roof was probably allowed to remain, and as richly decorated fragments of wall plaster were turned up, the walls on either or both sides were now ornamented with painting. Taking into account the great alterations indicated, it may not be too far fetched an idea to suppose that while the western division of the courtyard may still have been given over to the fullers yet working in Block A, the eastern one may have become a garden, the eastern half of the great corridor and the altered approach from the main gateway forming cloistered walks on two sides of it. This view is rendered the more probable by the character of Block E, which may have been built at this time to join Block A and Block C together. This was a large hall over 47 feet long by 16 feet wide, with a wide opening upon the great corridor (18). Its walls had been richly coloured with elaborate panelled work, and there can be little reason to doubt that it was looked upon as the room of greatest state and consequence of the house in its latest period. A chamber of such size and character would have been altogether out of place in close association with the work of a *fullonica*, but taken in connection with the now altered rooms of Block C, and set in view of a garden court, it would be in complete harmony with its surroundings.

Before concluding this account a final word or two must be said respecting one other feature in Block B connected with the fuller's work. This feature consists of the massive fragments of walling on each side of and about the furnace at *q* heating the hypocaust of the bath room constructed in the western half of tank 16, Block D. Undoubtedly the bath of that room would have required a boiler placed as usual over the furnace, but the provision for supporting it here is far in excess of anything that could be wanted for such a receptacle. It has been noted that in the Chedworth fullery tanks with hypocausts beneath them had been found, and a surmise was put forward that such tanks containing heated fluid

detergents had been used for wool scouring. Such tanks would serve for the scouring of worsted also. Now the masonry in question is heavy and large enough to have supported a boiler 4 feet wide and well over 9 feet long, with room at each end for workers to stand upon it when employed with its contents. There is also space for fixing, not only in the furnace but in the recesses on each side of it, smoke flues which could be made in the thickness of the wall. If therefore it be supposed that the wall of the house was continued, the large boiler just spoken of would rest upon the masonry described, with its back against that wall, whilst on the other side of the same wall there would be space for a much smaller boiler to serve the hot bath of the *caldarium*, both boilers being heated by the middle furnace.

This addition to the other processes of fulling practised in Block B could only have been made when the alteration was effected in Block D turning it into bath rooms. There seems also a sort of trace that the process of wool or yarn scouring might have been carried on elsewhere in the buildings while the entire *fullonica* was in working order, for in Chamber 33 of Block A there are vestiges of a furnace at *t*, 7 feet 6 inches long and 1 foot 6 inches wide, with a still longer continuation forming a right angle to it. This furnace appears to have had its mouth in the door or opening at the north end of the corridor lining Chamber 16. Partly over the furnace, partly supported by the mass of masonry lying between it and the wall, the boilers could have found a place. Unfortunately, however, scarcely any details have been preserved of the remains in Chamber 33, and therefore their exact character has not been ascertained.

These notes on the villa at Darenth may well end here. That its history, as traced in this account, may not be given with exact accuracy is scarcely to be expected, but it is believed that the main features of that history are worked out with tolerable correctness. They may be summed up thus: first, two houses of moderate capacity exist in close contiguity, with their enclosures and outbuildings; one, the larger, is of the corridor type, the other is of the courtyard type. Secondly comes the establishment of a *fullonica*, in which the two buildings are joined together by the necessities of the craft, which also cause the erection of a third structure, Block C. Thirdly, in the final stage changes are effected resulting in the abandonment of the *fullonica* except in Block C, and the erection of the hall, Block E, all such changes being made with the intention of rendering the buildings more suitable as a habitation than for the purposes of a craft. It is

in this last stage, as represented in Plan IV., that they were found when uncovered in 1894-95.

What has just been said of the remains at Darenth may also be said of the less extensive and less well marked remains at Titsey and at Chedworth. Puzzling and vague in some ways as are these remains, the writer of this paper feels assured that on all three sites enough exists to show the practice of an ancient trade, and that that trade was the craft of the fuller.

The Society is indebted to Mr. E. C. Youens, of Dartford, for his kind permission to reproduce the photographs of the Darenth Villa shown on Plates LIX.-LXIII.



GOLD STANDING CUP IN THE POSSESSION OF THE DUKE OF PORTLAND, K.G.

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XI.—*Note on a Gold Standing Cup in the possession of the Duke of Portland, K.G.*
By CHARLES HERCULES READ, Esq., Secretary.

Read 1st December, 1904.

GOLD plate is of such rare occurrence that I have thought it would be agreeable to the Society to see the very handsome example that the Duke of Portland has been good enough to send up at my request from Welbeck for exhibition. (Plate LXIV.) The metal is evidently of high quality, and the form is by no means inelegant for the period at which it was made. The bowl is beaten into a shell-like form, with elaborate projecting scroll-work enamelled and set with jewels, and having at the back a figure of Pan with Cupid seated astride of his neck all modelled in the round; the stem is formed of a pair of lovers embracing, and the foot is of a lozenge form made up of a number of enamelled scrolls alternating with jewelled bands. The whole of the work is of the most minute finish, not only as regards the chasing and engraving of the gold, but the figures that form so important a feature of the design are modelled with unusual vigour and artistic perfection, and there can be no reasonable doubt that they are the work of a master. I have not, however, been able to trace the artist during the short time the cup has been in my custody. The enamelled work is of interest in the history of the craft, for it well illustrates the transition from the method that characterised the jewellery of the sixteenth century to that prevalent in the seventeenth. The former is commonly found during the last three quarters of the sixteenth century, and consists in cutting away the ground of the design down to a certain depth, and the engraved portions are then filled in with enamel, leaving the design itself in the metal. This style of work required great dexterity on the part of the engraver, for the dividing lines of gold were often of great thinness, and the slightest deviation of the graver

would instantly catch the eye and destroy the quality of the work. This class of enamelled decoration for jewellery was succeeded in the seventeenth century by another of a similar effect, but not requiring anything like the same care. The whole ground was in this case covered with an enamel of a uniform colour, not uncommonly white, and upon this ground was laid in enamels of other colours the required design. A great professor of this method was the Frenchman Toutin, and the style of which he was so expert an exponent is popularly considered to be of the time of Louis XIII. of France (d. 1643). Thus this cup would probably be a contemporary example of the work then fashionable, for its date must be of about the second quarter of the seventeenth century. It has, however, no stamp of any kind, nor any mark by which either its nationality or workmanship can be determined. On articles of gold, however, made in all probability to a special order, and for a personage of high rank, such an omission is by no means remarkable. I think there can be little doubt, from the evidence of the cup itself, that it is of South German work, probably from the hand of a leading craftsman of Augsburg or Nuremberg. Some evidence in support of this is furnished by a silver cup in the Waddesdon Bequest in the British Museum. This cup, though evidently later in date, is still of a similar style. It bears the stamp of Augsburg and that of the silversmith Matthæus Wolff, who died in the year 1716. The cup itself has the name of the owner and the date 1690. The year of its manufacture was probably therefore not long before this, and it cannot on other grounds be placed earlier than 1680.

There appears to be no record at Welbeck of how the cup before us came into the possession of the Duke of Portland, but further inquiry may result in gaining information on this head.

XII.—*The Thirty Pieces of Silver.* By G. F. HILL, Esq., M.A.

Read 8th December, 1904.

THAT the incident of the Betrayal of Christ for Thirty Pieces of Silver should have had an attraction for the mediæval maker of legends, and that pieces professing to be the original coins received by Judas should have been treasured as relics, are hardly matters for surprise. There is no lack of literature on the legend which was woven round the story of the Thirty Pieces, and of late years two or three writers have devoted some attention to the supposed relics of the Betrayal. A comparison and analysis of the various forms of the legend have, however, not been instituted, so far as I have been able to discover. As to the relics, the material for study is only to be found in foreign periodicals and works not generally accessible. It seems worth while therefore to make some attempt to trace the development of the legend, and to collect the descriptions of the coins which were or are preserved in various sanctuaries.

The earliest extant work in which I have been able to find the legend in a fully developed form is the *Pantheon* of Godfrey of Viterbo, who died in 1191. He gives it in one of his Latin poems in rhyming three-line stanzas,^a beginning :

Denariis triginta Deum vendit Galilæus,
quos et apostolicus describit Bartholomæus,
unde prius veniant, quis fabricavit eos.

^a I follow the text as given by E. du Méril, *Poésies Populaires Latines du Moyen-Âge*, 1847, p. 321. I may here record my thanks to Miss L. Eckenstein and Mr. J. A. Herbert for several references to literature and documents bearing on the subject of this legend.

Freely translated, and somewhat abridged, Godfrey's account is as follows: "Ninus, King of the Assyrians, had these coins made, and it was Terah who fashioned them out of gold; with them the Ninivite king set up his market. The face of the King was stamped on these denarii to furnish an example to all time, and to perpetuate his own likeness. The son of this Terah, called Abram, afterwards took away these coins with his wife Sara when, at God's bidding, he went into Canaan. With these coins he bought land from the men of Jericho; with these also Joseph was bought by the Ishmaelites; these did wealthy Pharaoh keep in his treasury. These also the mighty Sibyl, the Queen Nicaula, possessed; even the Queen of the South, who afterwards from the Court of Solomon gave them, a reverent offering, to the Temple. But Nebuchadnezzar, when he spoiled the Temple, carried them away to Babylon, where they were given as pay for soldiers to the kings in Saba. When the three Magi together brought their three gifts, the scripture of the ancients records that the kings whom the strange star called forth brought these coins to God. But when, taught by angelic warnings, these kings had gone home, a most worthy garment was sent down from heaven for the Child; without seam was it, and of wondrous hue. His Father sent it from heaven; no woman span it; it became longer as the Child grew in stature. Now when Herod commanded that the Child should be sought out to be slain, His Mother in fear of death fled to the land of the Nile and lay hidden there. Then these three gifts were left in that hiding place, the gold, frankincense and myrrh, and the blessed garment of God. Some shepherds came and carried away the gifts. Now there was a certain astrologer who removed the gifts which had been left behind. He knew by the stars all the portents of Christ's coming; he was an Armenian, just and honourable. Now in the time when Christ was teaching, an angel said to this man: Render up the gifts of God which thou hast taken; let the sacred gifts of God be restored to Him. So the short tunic of the Child was given back, and as Jesus put it on it became of full size. The man saw it, and his mind was troubled and astonished. The thirty denarii which they had brought to God they gave, at the behest of Jesus, to the treasury of the Temple, which denarii they say Judas afterwards received as his price. After the death of Christ Judas brought them back and cast them down in repentance, and hanged himself and burst asunder. Then they gave fifteen denarii for the Potter's Field, and as

^a If my version is prosy, confused, and disjointed, I think I am justified in saying that the original is hardly less so.

many to the soldiers who guarded the tomb by night. Perchance thou thinkest, reader, that my words agree not together, since I have written that those coins were of gold; for the Book speaks of silver. Mark said that the Lord was bought for silver; of coins or of a talent of gold he spoke not. But it is even as I have said; for it was the custom of the ancients to use more than one name for gold, and to call different metals by the name of silver. Know that Saint Bartholomew wrote thus of this matter; his Hebrew discourse to the Armenians tells how the very God was sold for gold:

Ergo, patente nota, solus negat hoc idiota,
cujus habent vota non discere facta remota;
lectores dociles pagina nostra vocat."

The "discourse of St. Bartholomew to the Armenians written in Hebrew" seems to have disappeared without leaving any other trace; it is at least ignored by the chief modern authorities on the apocryphal literature. We may perhaps assume that Godfrey drew from a Latin translation of some legend of Armenian origin. This is suggested by the facts that the *Sermo*, although written in Hebrew, is addressed to the Armenians, and that the hero of the story is an Armenian.

Very little later than Godfrey of Viterbo is the author of the Syriac *Book of the Bee*,^a Solomon, who became Bishop of Basra about 1222 A.D. In him we find the legend in an elaborate and considerably different form, betraying the influence of the legend of Abgarus, King of Edessa. Before giving his version, it is as well to note that the legend can hardly have been known in Syriac-speaking lands before the ninth century. Otherwise it would surely have been worked into the Chronicle of Dionysius of Telmabar (Patriarch of Antioch from 818 to 845 A.D.). This writer^b and Pseudo-Ephraim,^c the author of the *Cave of the Treasures*, deal in great detail with the history of the treasures brought from Paradise. Adam took from the borders of Paradise gold, myrrh, and frankincense, and placed them in a cave, and blessed it, and consecrated it, so that it

^a See the edition (Oxford, 1886) by Mr. E. A. W. Budge, who called my attention to this version of the legend. Assemani (*Bibl. Orient.* III. i. 317) says that the legend occurs frequently in Syriac MSS., but gives no details; and inquiries from several Syriac scholars have failed to confirm his statement.

^b Cf. E. Renan, in *Journal Asiatique*, 1853, p. 467.

^c C. Bezold, *die Schatzhöhle*, 1883.

should be the house of prayer for him and for his sons, and called it the Cave of the Treasures. The Gnostic Apocalypse of Adam^a connects these treasures definitely with the Magi: "And we sealed this Testament, and placed it in the Cave of the Treasures, where it remains unto this day, with the treasures that Adam had taken from Paradise, the gold, the myrrh, and the incense. And the sons of the Magi kings shall come, shall take them, and shall bear them to the Son of God, in the grotto of Bethlehem of Judah."^b

To return to Solomon of Baṣra. He refers (p. 85) to the belief that the gifts brought by the Magi were descended from Adam only to condemn it as not received by the Church. The legend itself, as he gives it (p. 95), is briefly this.^c Terah made these pieces for Abraham; Abraham gave them to Isaac; Isaac bought a village with them; the owner of the village carried them to Pharaoh; Pharaoh sent them to Solomon, who placed them round about the door of the altar. Nebuchadnezzar, struck by their beauty, carried them off. He gave them to some Persian youths who were at Babylon as hostages, and these youths, being released by Nebuchadnezzar, carried them to their parents. From Persia the Magi brought them with the other gifts. On their way, when near Edessa, the kings fell asleep by the wayside, and when they went on they left the coins behind. Certain merchants found them and brought them to the neighbourhood of Edessa. On that same day an angel appeared to the shepherds and gave them the seamless garment. The shepherds, taking this garment, met the merchants, and an exchange was promptly effected. The merchants went into Edessa with the garment, and the King Abgarus sent to them and asked if they had anything meet for kings, that he might buy it. When he saw the garment he asked whence they had it, and on learning the facts sent for the shepherds. Thus he acquired both the garment and the coins, and sent them to Christ for the good which He had done him in healing his sickness. Christ kept the garment but sent the pieces to the Jewish treasury. The priests gave them to Judas, and the rest follows as in the gospel.

I have said that this version differs considerably from that of Godfrey of Viterbo. Nevertheless there can be no doubt of their common origin; they begin

^a Renan, *op. cit.* p. 457.

^b This passage is referred to in the Syriac "Passing of the Blessed Virgin" (W. Wright, *Contr. to the Apocr. Lit. of the N. T.* 1865).

^c The thirty pieces of silver, he says, were thirty pieces of silver according to the weight of the sanctuary (*i.e.* the sacred Jewish shekel of about 224 grains troy) and equivalent to 600 pieces according to the weight of our country (*i.e.* dirhems).

and end alike; the seamless garment is associated with the coins in the same mysterious way. Godfrey's Armenian astrologer corresponds to King Abgarus. But we lose the attractive episode of the presentation of the coins to the infant Christ and the losing of them by the Virgin.

Of course the discovery of other Syriac versions may throw new light on the development of the legend. But with the present evidence we are probably justified in supposing that the ultimate source of both Godfrey's and Solomon's stories would be found in a comparatively simple form in Pseudo-Bartholomew. Possibly the minute germ from which the connection of the coins with the Magi sprang is to be found in the well-known Apocryphal Gospel of Matthew. The date of this apocryph is not later than the fourth century after Christ. Here in chapter xvi.^a we read: "then they opened their treasures, and gave exceeding great gifts to Mary and Joseph. *But to the Child Himself they each offered one gold coin.* After these, one offered gold, the second frankincense, and the third myrrh."

Surely there is an echo of this in Godfrey's stanza:

Hos reges Saba quos post nova stella vocavit
ferre Deo nummos Veterum scriptura notavit
cum tria tres socii dona tulere magi.

The picturesque effect of these three coins would appeal to the mythopœic faculty. It would be easy to multiply them by ten. And once connected with the Magi, with all the mysterious traditions that involved the Kings of the East, it would be but natural to take the history of the coins back to the time when the Sabæan land previously played a part in Biblical history, *i.e.* to the time of the Queen of Sheba. Possibly also the tradition that the Magi were descended from Abraham by Keturah^b may have made it easy to carry the story of the coins back as far as Abraham.

This, however, is mere speculation. Let us return to the legend itself.

In the third quarter of the fourteenth century a great vogue was given to the story by two writers, Ludolph of Suchem and John of Hildesheim. The latter, a Carmelite friar, is better known, but the priority seems to rest with

^a Tischendorf, *Ev. Apocr.* 1876, p. 83.

^b Did this tradition originate in the name *Sheba* borne by one of the grandchildren of Abraham by Keturah? (*Gen.* xxv. 3.)

Ludolph. His *de Itinere Terræ Sanctæ*^a was dedicated to Baldwin of Steinfurt, Bishop of Paderborn, a fact which dates it before 1361. Internal evidence and comparison with the "Book of Cologne" show that it is later than 1350. Ludolph, according to his own statement, was in the Holy Land from 1336 to 1341.

He gives as his authority (chapter xxxix.) the *History of the Kings of the East*.^b The coins were some of a number made for Ninus by Terah, who received thirty of them *pro suo salario*, a pleasing touch. Abraham spent them in his exile, and they came into the hands of the Ishmaelites. The Ishmaelites bought Joseph with them, and with them Joseph's brethren bought corn out of Egypt. Afterwards they were sent into the land of Saba to buy merchandise for Pharaoh (*in Saba pro mercimoniis ex parte Pharaonis*). The Queen of Sheba brought them to Solomon, and they were placed in the Temple; thence they were carried off by Nebuchadnezzar, who gave them to the King of Godolia. There they remained until, at the time of the birth of Christ, the kingdom of Godolia was transferred to the kingdom of Nubia. Melchior brought them to Christ, because older and nobler gold than this he found none in his treasury. They were lost by Mary when she fled to Egypt in the Balsam Garden; and there they were found by a certain shepherd, who kept them until the time of the Passion approached. Falling ill and hearing of the works of Christ, this shepherd came to Him and was cured. The rest of the story agrees with the account as given in Godfrey of Viterbo; but there is no excursus on the sacred garment, nor are we told what the coins were like. The discrepancy between the metals is briefly explained. Finally we are told that when the predestined object of the denarii was fulfilled, they were immediately separated and dispersed.

Ludolph's book was meant for pilgrims and those interested in their journeys. John of Hildesheim appealed to an audience perhaps even wider. His *Liber de gestis ac trina beatissimorum trium regum translacione* was dedicated to and written at the bidding of Florentius of Wevelinghoven or Wevelkoven, Bishop of Münster. Florentius held that see from 1364 to 1379, and, as John died at Marienau in 1375, the date of the composition is fixed between 1364 and 1375. It appeared in a

^a Ed. F. Deycks, *Stuttgart Lit. Verein*, 1851. Cp. the same critic's *Ueber ältere Pilgerfahrten*, 58 ff. He regards John of Hildesheim as the source of Ludolph; but the view taken in the text, and supported by Neumann in *Archives de l'Orient Latin*, II. (1884), Doc. 313 ff, seems to be dictated by the chronological data. Ludolph's work has been translated for the Palestine Pilgrims Text Society (1895).

^b As Ludolph was in the Holy Land for some time, he may very possibly have gone to some Syriac sources.

German translation as early as 1389.^a In modern times attention was called to it by Goethe.

The account given by John in chapters xxviii. xxix. is very full. I have space only to note the chief points of interest.

The source of the story of the offering of the coins by Melchior is described as the *libri Indorum*.^b After the death of Jacob, Joseph sent the coins to the kingdom of Saba for spices to bury his father, and they were placed in the treasury of the Sabæan kings. Then, just as Godfrey and Ludolph relate, they found their way to the Temple of Jerusalem. In the time of Rehoboam, in the taking of Jerusalem and the spoiling of the Temple, they came into the hands of the King of the Arabians, who was then an ally of the Egyptians, and thus into the royal treasury of Arabia. Melchior King of Nubia and of the Arabians brought, together with many other precious gifts, these thirty denarii, since older and nobler gold in his treasury he found none. These only he offered to our Lord, passing over the other gifts in his fear (as described in chapter xxii.). The treasures (*i.e.* the coins, frankincense, and myrrh) were taken by the Virgin, wrapped up in a linen cloth, and lost on her flight into Egypt. They were found by a Bedouin shepherd. He kept them until, shortly before the Passion, he fell into an incurable disease. Hearing of the fame of Jesus, he came to Him, and was cured and converted. He offered the gifts to Jesus; but Jesus knew them and bade him put them on the altar. And the priest burnt the frankincense, and put the myrrh with the coins in the treasury. In order that all the Jews indifferently should be responsible for the Passion and death of Christ, the priests took the coins out of the common treasury and gave them to Judas. Part of the myrrh was mixed with the vinegar offered to Christ on the cross, and the rest was given by Nicodemus for the embalming of the body. The coins when returned by Judas were divided, as we have learned they were from Godfrey and Ludolph. A description follows of the cemetery in the Potter's Field; also we have Godfrey's ingenious explanation of the discrepancy between Gospel and

^a The Latin version was first printed in Germany in 1477; reprinted in 1478, 1481, 1486, and 1514, and at Modena (as *Legenda sanctorum trium regum*) in 1490. A more or less critical edition was published by E. Köpke from a Brandenburg MS. in *Mittheil. aus d. Handschr. d. Ritterakad. zu Brandenburg*, 1878. A text with very full apparatus criticus accompanies the edition of the English version in the Early English Text Society's publication, *The Three Kings of Cologne*, ed. by C. Horstmann (1886), to which I may refer the reader for further details.

^b Doubtless, as Horstmann suggests, John's sources may have been largely fictitious; in any case he can hardly have known such Oriental sources except through some Latin history.

legend as to the metal of the coins, given in a more elaborate and confused form. They were called by the general name *argentei*, just as gold denarii are now called *scuti mutones*^a or florins. The type, weight, and appearance of the coins in use from the time of Abraham down to the destruction of Jerusalem by Titus and Vespasian remained, we are assured, unchanged, and in all parts of the East coins never alter their weight or value. Then comes an obscure passage on the garment of Christ: the style and size of the seamless garment have remained in hereditary use among very many princes and nobles down to the present day.^b Each of the thirty pieces is said to be worth about three florins;^c and on one side of the coin is impressed the head of a king, laureate, and on the other side are Chaldaic letters which modern men cannot read or decipher.

The early German translation of John's book already mentioned^d presents certain small variations, of which perhaps the only one worth recording is that Potiphar, Pharaoh's chamberlain, is said to have bought Joseph directly from his brethren with these coins.

It will be observed that John differs from the other writers in saying that the Egyptians, not Nebuchadnezzar, carried off the coins in the reign of Rehoboam, *i.e.* when Shishak took Jerusalem.

The legend seems to have found its way into England in the fourteenth century, although it has left, so far as I know, but one slight trace at that early date. This occurs in a mutilated scripture history, which used to be attributed to Adam Davie (*circa* 1312 A.D.). But the attribution is baseless, and there is, it would seem, no reason why this fragment should not belong to the end of the century. In that case the author may have learned the story from Ludolph or John of Hildesheim. The fragment is as follows:^e

For pritty pens þai solden þat childe ; þe seller hiȝth Judas.
þo Ruben com hom *and* myssed hym ; sori ynouȝ he was.

^a In the Modena edition *scudati mutenes*. The French écus with the mouton (Agnus Dei) are meant.

^b The garment, we have seen, is also associated with the coins by Godfrey and Solomon. The object here appears to be to draw a parallel between the fashion in dress and the fashion in the coinage in respect of permanence.

^c Say 25s. of our money.

^d See Simrock, *die Legende von den heiligen drei Königen*.

^e MS. Laud Misc. 622, fol. 65 (Bodleian Library). I have to thank Mr. A. E. Cowley for procuring me a copy of the whole of this portion of the MS. W. Sandys (*Christmas Carols*, 1833, p. lxxxv.) notes the connection of the verses with the legend.

þe childes kirtel hij nomen ; and in blood it wounde
 Ac casten it at her fader feet ; and seiden hou þai it founde.
 Allas allas seide Jacob ; þat I þis day schulde ywite.
 Wilde bestes in þe wood ; habbeþ my childe y-bite.

Unfortunately the verses that should follow are lost ; but it is possible that there was no further allusion to the legend than that involved in the alteration of the price from twenty to thirty pence.

A fifteenth-century MS. account in the British Museum (34,276 fol. 33b.), written in Latin by an English scribe of the name of Barow, is obviously an abridgment of the story as told by John of Hildesheim. It was probably taken, to judge from the style of the writing, not from the printed book, but from one of the many earlier MSS. It omits the stages by which the coins, after they were deposited in the Temple, came into the hands of the Magi. The *Badwini* (Bedouins) of John of Hildesheim are transformed into the English-sounding name *Bodwynny*.^a The explanation of the discrepancy between the metals is omitted, but the passage describing the coins agrees almost *verbatim* with John. This writer adds :^b after the denarii had fulfilled that which was to be fulfilled, they were dispersed.

The pilgrim Felix Fabri, of Nürnberg, at the end of the fifteenth century, read the story, he tells us, in a certain long and wordy history.^c He is not given to brevity himself, but his words accurately describe John of Hildesheim's work. But certain small coincidences show that he rather followed Ludolph, or Ludolph's source. Thus he says that the coins were sent to the land of Saba *pro merci-moniis*, without mentioning spices ; Nebuchadnezzar presented them to Godolias,^d by whom they were transmitted to the kingdom of Nubia. He does not mention the balsam-garden ; the treasures were lost in the desert. But from the finding of them by "a certain shepherd" down to the end of the story he agrees most

^a The MS. of John's work at Corpus Christi Coll. Cambridge has *Bodewini*. The English MSS. edited by Horstmann do not attempt to classify the shepherd.

^b Like Ludolph, and like the English translation (Horstmann, pp. 100, 101).

^c See his *Evagatorium*, i. 426 (ed. by C. D. Hassler in *Stuttgart Lit. Verein*, 1846-1849). The Palestine Pilgrims Text Society have published the work in English (1892-3). The passage in question is translated by de Vogüé in *Rev. des Deux Mondes*, viii. (1875), 531 f ; see also Barbier de Montault in *Rev. de l'Art Chrétien*, N. S. iv. (1886), in an article to be referred to later.

^d Godolia, in Ludolph and in John of Hildesheim (chapter xi.), is the name of the kingdom ; but John does not mention it in this connection.

closely with Ludolph, except that he does not deal with the question of the metal, and that he supposes all the thirty to have been spent on the purchase of the Potter's Field.

It seems clear from the evidence here given that between Godfrey of Viterbo and Ludolph of Suchem there is a gap which should be filled by the History of the Kings of the East from which, or from different versions of which, both Ludolph and John of Hildesheim drew.

There are two other MSS. in the British Museum which represent different versions of the legend. Both are of the fifteenth century. One (22,553 fol. 144 b) is in an Italian hand. I mention here only the more important details in which the account differs from those already described. Nothing is said about the coins being of gold. Abraham bought with them the tomb in which Adam and Eve had been buried. From the Egyptian treasury they came into the hands of Moses, who gave them to a Queen of Sheba. The Virgin, when she had received them from the Magi, gave them to the shepherds who came to adore Christ, because they were poor; and they departing placed them in the Temple. There is no reference to the division of the money between the soldiers and the purchase of the Potter's Field.

The other MS. (34,139 fol. 87), which is in a German hand, differs from the preceding in stating that the coins found their way into the Temple for the second time as the price for which the Virgin redeemed her Son according to the law, after she had presented Him in the Temple. Finally, I may note an isolated statement in the thirteenth century *City of Jerusalem* to the effect that the thirty pieces were struck at Capernaum. This does not seem to fit in with any of the versions of the legend that we have considered.^a

In all the versions, except that of Solomon of Baṣra, the coins are actually presented by the Magi to the infant Christ. Solomon, by a very complicated process, brings the coins into the hands of King Abgarus. In Godfrey's version also there is some confusion in the transition from the finding of the coins by the shepherds to their acquisition by Abgarus' double, the Armenian astrologer. It looks as if, in the story from which both Godfrey and Solomon drew, this point was not quite clear. Solomon has "joined his flats" better than Godfrey, but has evidently had to exercise considerable ingenuity in doing so.

^a The *City of Jerusalem*, part ii. in no. 8 of the Palestine Pilgrims Text Society's publications, p. 31. The date of this work appears to be between 1220 and 1229 A.D.

If I may be allowed to venture one more hypothesis, I would suggest that the two short versions in which the whole episode of the losing and finding of the coins is omitted may, in view of their comparative simplicity, represent a very old form of the story.

Here we may leave the legend. Perhaps the somewhat irritating gaps in the material so far collected may stimulate some scholar, better equipped than myself, to bridge them over. But it is not amiss to recall the warning which I seem to have heard somewhere: he who thinks that he has attained a definitive result in tracing the development of a mediæval legend may deceive himself, but he will not deceive his readers.

But the history of the coins does not stop here, and we have now to deal with something less elusive in the shape of those pieces which, each professing to be a "Judas-penny," found their way into the sanctuaries of Christendom.

Between fifteen and twenty such pieces have been traced; some are still extant; others though lost have been described with sufficient accuracy to enable us to say to what class they belong; of others we have but a bare mention. What we do know makes it probable that no single one of the professed relics was actually a coin of the kind that was in circulation in Judæa in the time of Christ.^a

The most exhaustive treatment of this subject is to be found in an article by the distinguished "lipsanographer," M. F. de Mély.^b This was, however, preceded in 1886 by an article by M. Barbier de Montault,^c dealing especially with the reliquary of S. Croce in Gerusalemme. Finally, some additional information has been furnished by two other writers.^d The existence of these articles relieves me from overloading this paper with detailed references for each coin.

M. de Mély has noted the following six places in which specimens of the

^a On the general subject of coins as relics I may refer to E. Babelon, *Traité des Monnaies*, i. 76f. An interesting case which has not been mentioned in this connection is the *nummus perforatus lancea Sancti Mauricii Martyris* which used to be at Canterbury (J. Dart, *History of the Cathedral Church of Canterbury*, 1726, App. xlvii.; from British Museum MS. Cotton Galba E. iv fol. 125 b, of the early fourteenth century). Any perforated coin with the head of a Roman Emperor would no doubt serve as a relic of the soldier saint who had refused to worship his imperial master.

^b *Les Deniers de Judas dans la Tradition du Moyen Age* in the *Revue Numismatique*, 1899, pp. 500-509.

^c *Rev. de l'Art. Chrét.* N.S. iv. 214f.

^d F. de Villenoisy, *Le Denier de Judas du Couvent des Capucins d'Enghien* (Enghien, 1900); P. Perdrizet, *Une Recherche à faire à Rosas* in *Revue des Études Anc.* 1902. My thanks are due to both these writers for copies of their contributions.

Thirty Pieces, not sufficiently described to allow of identification, were preserved:

- (1) The Visitandines at Aix.
- (2) Notre Dame du Puy.
- (3) The Abbey of St. Denis.
- (4) Montserrat in Catalonia.
- (5) S. Croce in Florence.
- (6) The Annunziata in Florence.

Of the coin at S. Croce we are told that Cosimo de' Medici the Elder received it from the Greek Patriarch who came to the Florentine Council (*scil.* in 1439-1442). Richa, who says that the coin in the Annunziata was similar to it, suspends judgment as to the authenticity of the S. Croce relic, which he says was neither a Hebrew nor a Roman coin. The piece in Notre Dame du Puy was left to the ancestors of the barony of Agrain by a virtuous lady of that house, who, having a son in the service of the Grand Turk, received from him this precious denarius, "which is of great efficacy for the comforting of women labouring with child." As to the pieces at Aix and St. Denis, M. de Villenoisy points out that as they are only mentioned in the *Dictionnaire des Reliques* of Collin de Plancy, an author who is not to be trusted when he does not give his sources, they cannot be regarded as undoubted instances.

Finally, I am informed by Professor Markoff, through M. Alexeieff, that a silver coin is preserved as one of the thirty at (7) the Abbey of the Trinity and St. Sergius in Moscow. Professor Markoff describes it as an evident forgery. At the time of writing I have not the further details which would enable me to transfer this coin to the next group, that of coins of which the description is known.

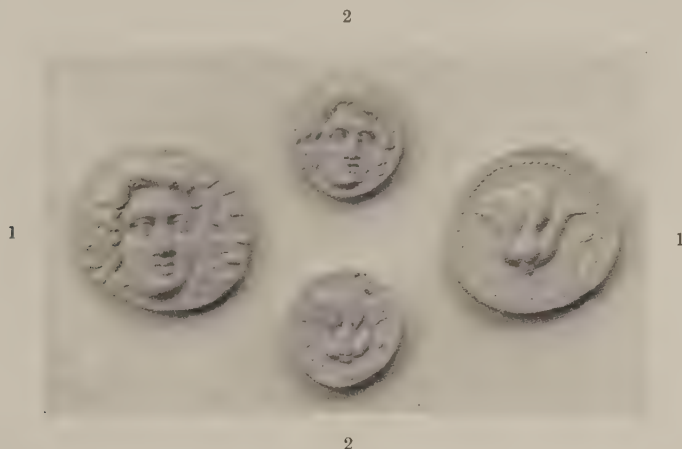
Of these, no less than eight can be identified, either because they are still extant, or from illustrations or descriptions, as coins of *Rhodes*. For the most part, it would seem, they date from the fourth century before Christ. They bear on the obverse a facing head of the Sun-God, with flowing hair, sometimes surrounded by rays; on the reverse is a rose and the inscription ΠΟΔΙΟΝ. Figs. 1 and 2 show specimens of two coins of the same class now in the British Museum. The coin which was in the Temple at Paris must, from Morand's description, have been a coin of the same issue as fig. 2, for it had the same mint-letter (Δ) and adjunct (thunderbolt).

The places where these Rhodian coins were or are preserved are the following:

- (8) Rhodes, in the castle of the Knights of St. John. The earliest mention

of this particular piece which I have been able to find is by Luchino dal Campo,^a who wrote the account of the visit of Niccolò III. of Este to the Holy Land in 1413. He describes it as "one of those very denarii of silver for which Christ was sold; the which denarius is of the size of an *agrunto*.^b On one side is the head in relief and on the other is a flower as it were like the flower of a marguerite."

As the Rhodian piece is not mentioned in the account of the voyage of the Seigneur d'Anglure,^c who visited the island in 1395, it is probable that the relic was only acquired between 1395 and 1413. It is unlikely that the Judas-penny would have been passed over, when the *denier de Sainte Helène* was mentioned.^d



Figs. 1, 2. Silver coins of Rhodes, fourth century B.C.

^a *Viaggio a Gerusalemme di Niccolò da Este*, ed. by G. Ghinassi in *Collezione di Opere ined. o rare pubbl. per cura della R. Comm. pe' Testi di Lingua nelle Prov. dell' Emilia* I. (Turin, 1861), p. 143.

^b The editor suggests that this word is a mistake for *agostaro* (the gold coin issued by Frederick II.). But this was hardly in circulation in the fifteenth century, so that dal Campo would not be likely to use it as a measure of size.

^c Bonnardot et Longnon, *Le Saint Voyage de Jérusalem du Seigneur d'Anglure* (Soc. des anc. Textes français, 1878).

^d *Op. cit.* p. 9: "item, ung des deniers de sainte Helene envaissellé en plomb, sur lequel on fait les bullettes de Rodes qui sont de si grant vertu; et les fait on le jour du Grant Vendredi." *Cp.* p. 94, note: "Item, en laidicte esglise de Saint Jehan nous fuit montrés ung dez denier d'ors l'amperise sainte Eslainne, qui est aissis en ung pomelz de laiton et soldéz di plont, car aultrement ne se lait ledit denier asseoir ne solder. Sor lequels denier on fait chescun ans plussour bullete de virge sire, c'est aissavoir le jour dou Saint Vanredi, en tant que on dit l'office en l'esglise; lezquelle bullete porteet on plussour vertus belle et noble." We shall see later on the bearing of these passages

After Luchino dal Campo comes Johann Tucher of Nürnberg, who went to the Holy Land in 1479 and 1480. He mentions the coin in his description of Rhodes, and again, when dealing with the Potter's Field, he says, "I have seen one of these pennies, and three such in silver are worth a ducat."^a

Felix Fabri, after telling the story as we have already heard him, continues: "After the purchase of the field they were dispersed throughout all the world; I saw one at Rhodes, of which Johann Tucher of Nürnberg made an impression. He made a model in lead and cast similar ones in silver, which he distributed to his friends. In the year 1485, when we were assembled at Nürnberg to hold the provincial chapter, the said person gave one of these denarii to each of the brothers. The size is the same as that of the cross-blafferts,^b and on one side is the face of a man and on the other is a lily. There was certainly an inscription, but it cannot now be seen." Fabri mentions the coin at Rhodes (in the Castle) when he comes (iii. 288) to describe the relics in that island. "Marguerite" and "lily" are not very good descriptions of the Rhodian rose, but will pass muster for the time.

Yet another reference to the Rhodian piece is to be found in Bernhard of Breydenbach's *Peregrinationes ad Terram Sanctam* (Mainz, 1486) in the chapter on the relics at Rhodes: item ibi illorum xxx. argenteorum denariorum unus esse perhibetur, ymmo et demonstratur, pro quibus Judas vendidit Christum iudeis.

But not the least important reference to the Judas-penny of Rhodes is that in the *Stabilimenta* of Guill. Caoursin.^c In describing the veneration which should be paid to the relics, he says: "nor let less honour be paid to the silver denarius, one of those thirty pieces of silver at which the traitor Judas priced Christ: from an impression of which stamps are made in white wax every year while the

on our investigation. It may be noted that Cennino Cennini in his treatise on painting has a chapter (188, p. 177 in Mrs. Herringham's translation) on "how to make impressions of *santelene* in wax or paste." I do not know Milanese's authority for the statement that *santelena* was a general name for a medal or coin bearing the image of a saint. More probably it meant just one of these *bullettes de Rhodes*.

^a Feyerabend, *Bewehrtes Reyssbuch* (1659), 656, 666.

^b *Quantitas est sicut blaphordorum crucis*, which De Vogüé ingeniously translates "il y en a autant que de clous à la croix." It is sometimes risky to guess at the meanings of words. *Blaphordus* or *blaffardus* is the German *Blaffert* or *Plappert*, a silver coin widely current in Germany and Switzerland in Fabri's time. A variety with a cross on it was called *Kreuz-blaffert*, *blaphordus crucis*.

^c *Stabilimenta Rhodiorum Militum Sacri ordinis* (1496), fol. d 1 verso.

Passion is being chanted by the priest; which stamps are esteemed to be of virtue for the health of men, for the labour of women, and for perils by sea."

As we find a similar relic described as being in the possession of the Order at Malta, we may presume that when the knights left Rhodes in 1523 they brought this precious coin with them. The Prior of the Order, Ant. Cressin (1556-1584), used to distribute to pilgrims wax impressions covered with silver or gold leaf.

(9.) Rome, in S. Croce in Gerusalemme. This piece is still kept in a little fifteenth-century reliquary inscribed with the name of Cardinal Bernardin de Carvajal, and given by him towards the end of the fifteenth century.^a

(10.) Rosas in Catalonia (still preserved).

(11.) Oviedo, in the Camera Santa of S. Salvatore.

(12.) Paris, Church of St. John Lateran.



Fig. 3. Medallion portrait of Judas Iscariot, and production of a Rhodian coin, from Rouille's *Promptuaire des Médailles*.

(13.) Paris, Temple.

(14.) Vincennes.

(15.) Enghien, still preserved in the Capuchin Convent, and formerly at Héverlé near Louvain. This is a Rhodian four-drachm piece with the magistrate's name ΑΡΙΣΤΟΚΡΙΤΟΣ.^b M. de Villenoisy describes the adjunct as an "armed man." Curiously enough this adjunct is not, to my knowledge, otherwise associated with Aristokritos, who generally, if not always, placed an *aplustre* on the coins struck by his authority.

Rouille, in his *Promptuaire des Médailles*,^c gives, together with an imaginary medallion portrait of Judas, a reproduction of one of the Rhodian coins. The engraver has made the Δ of ΠΟΔΙΟΝ into an A (fig. 3).

^a See especially B. de Montault, *loc. cit.* I have not been able to consult his *Antiquités Chrétiennes de Rome*, in which the reliquary is photographed. M. de Mély gives a sketch.

^b Cp. B. V. Head, *British Museum Catal. of Greek Coins, Caria*, p. 241, no. 122.

^c Lyon, 1553, part ii. 10.

(16) Another Greek coin which was utilised for this pious purpose was one of the famous silver ten-drachm pieces of Syracuse, struck at the end of the fifth or beginning of the fourth century B.C. On the reverse was a chariot-group, below which were the prize arms competed for in the Assinarian games. On the obverse was the female head generally identified as Persephone; behind it a small shell by which we are enabled to identify the exact variety. The specimen, which has since unfortunately disappeared, and of which the provenance was never known, was framed in a gold mount and inscribed in Gothic letters *Quia precium sanguinis est.*^a

(17) Still preserved in the treasury of the Cathedral of Sens, and mentioned in an inventory of 1464, is a silver *dirhem* of the Egyptian Sultan El Ashraf Salah-al-din Khalil, of the Bahri Mamluks (A.D. 1290-1293).^b

(18) M. de Mély refers incidentally to the coins once preserved in the church of S. Eustorgio at Milan; but he does not give them a place in his list. Ughelli, however, to whom he refers, describes them as *monetæ quædam ex iis, quas Christo Magos tributi nomine obtulisse pie credunt.*^c The legends which we have discussed above show that these coins may perhaps be classed with the "Thirty Pieces." Later authorities speak only of a single gold coin, which as a matter of fact was a solidus of the Emperor Zeno (474-491 A.D.). It was known as the *ducato dei tre Magi*. Allegranza suggested that the remains of the three kings had been translated to Milan in the reign of Zeno, and a coin of his reign placed in the coffin from which it was afterwards extracted. This, however, is a pure conjecture. All that is certain is that this solidus was exposed for the public worship as one of the gold coins offered to Christ by the Magi.^d

To the above list, it will be observed, Russia so far has contributed only one instance. It is highly probable that search in the proper quarters would reveal others in that country. In spite of considerable search I have found no mention of any such relic in Germany, and England too seems to have been without one.^e

By the Capuchins of Enghien the legend ΠΟΔΙΟΝ is explained as [H]ΠΟΔΙΟΝ, "coin of Herod." This fact seems to favour M. de Mély's suggestion that in the superficial resemblance between the names of Herod and Rhodes lay the reason

^a Matthew xxvii. 6. It is described in Rollin and Feuardent's *Catalogue d'une Coll. de Médailles*, Paris, 1864, p. 124, no. 1769, where it is wrongly called an octodrachm.

^b Cp. de Montault, p. 218, who quotes from a seventeenth-century inventory.

^c *Italia Sacra* (1719), t. iv. 27, 28.

^d See *Delle antichità longobardico-milanesi illustr. con dissert. dai monaci della congreg. cisterciense di Lombardia*, iv. (1793), pp. 285, 286; and H. J. Floss, *Dreikönigenbuch* (1864), p. 56.

^e Mr. W. H. St. John Hope confirms me in this particular.

for the association of these coins with the Thirty Pieces of Silver. Otherwise why should so large a proportion of the relics (eight out of the ten or eleven which can be identified) be of this particular class? M. Babelon, however, throws doubt on this hypothesis. He points out that Rouille makes no allusion to Herod, and has allowed his engraver to give the inscription as POAION (for POMAION); the text of the gospel gives no ground for thinking of coins of Herod. Further, he cites Mommsen as proving from an inscription that the coins of Rhodes even in Roman times were prized for their beauty. It must, however, be admitted that Mommsen's interpretation of the inscription goes beyond the evidence; the Rhodian coins may have had a higher exchange value than others of the same weight, but we do not know that their beauty was the cause. In matters of this sort beauty counts for little. Probably the Rhodian coins had a reputation for purity. Again, the A in Rouille's engraving is probably a mere slip on the engraver's part; he would not be the only engraver who, from ignorance of Greek, has made this mistake, nor Rouille the only numismatist who has allowed it to pass. Is not the word given as POAION in one of the illustrations reproduced by M. de Mély from the work of Budæus? Again, the quantity of the o in Herod's name would, in those days, offer no obstacle to the identification. Nor has the objection drawn from the text of the gospel much force; after all, "pieces of silver" could be interpreted as coins of Herod no less than as Roman coins. M. Babelon's first objection has more validity than the others. There is no trace of this connection with Herod in any of the older literature. On some of the relics, as on that at Rhodes itself, we know that the legend was quite obliterated. These then could not have been chosen because of the reason suggested by M. de Mély.

The true reason, after all, is a very simple one, and has only escaped notice because the presence of the specimen in the castle at Rhodes was not recorded by M. de Mély, on whose researches all subsequent discussion of the question has been based. It must be remembered that a very large number of the pilgrims to the Holy Land would see the relics in the Castle. Now Rhodian coins must have been as common in the Levant then as now, and, being of striking beauty, once seen were not easily forgotten. The pilgrim would thus recognise another Rhodian coin, if shown him, as similar to the one at Rhodes. Here then, to his mind, was a possible "Judas-penny." It was thus inevitable that many such pieces should find their way into shrines.

This theory seems to me to explain why so many Rhodian coins figure in our list. But, it will be asked, Why was the particular relic at Rhodes selected for the purpose? To this it might be answered, Why was the Egyptian dirhem or the

Syracusan decadrachm chosen? But it is not necessary thus to evade the question. As we have seen, the Rhodian church possessed at the end of the fourteenth century a gold coin of the Empress Helena, impressions or facsimiles of which, made under certain circumstances of peculiar solemnity, were of great virtue. Now the *Voyage du Seigneur d'Anglure*, which mentions this gold coin of St. Helena in 1395, does not mention the silver "Judas-penny." Conversely, the later authorities, beginning in 1413, who mention the "Judas-penny" do not mention the coin of St. Helena. Finally we learn that impressions were made of the "Judas-penny" under the same circumstances and with the same effect as they had been made of the coin of St. Helena.

The "Judas-penny" then, early in the fifteenth century, had taken the place of the gold coin of St. Helena. And I think, on the evidence before us, we shall not be unjust to the knights in suggesting that, the latter having disappeared, the



Fig. 4. Silver reproduction of fourth century coin of Rhodes, fifteenth century.

authorities found it necessary to have some other relic of equally miraculous properties. If they were for any reason hard pressed, nothing could be easier to obtain in Rhodes than an ancient Rhodian coin; and if the inscription on it were obliterated, so much the better.

In the light of the fact that reproductions in silver were made by people like Johann Tucher, particular interest attaches to a piece cast in silver and now preserved at Paris in the Cabinet des Médailles in the Bibliothèque Nationale.^a As will be seen from the illustration (fig. 4), we have a considerably debased^b reproduction of a Rhodian coin of the kind with which we are familiar. In the mould of the obverse have been added the words *IMAGO CESARIS* in lettering of the fifteenth century. The man who added them obviously argued as follows:

^a Published by M. de Mély in *Rev. Numism.* 1901, p. 262 ff. M. de la Tour informs me that the piece is undoubtedly cast, not struck.

^b So much debased in style that many reproductions must have intervened, one would think, between the original and this.

This coin, one of the thirty pence for which Christ was sold, must have been one of those about which He asked the question, "Whose image and superscription is this?" Therefore the head is that of Cæsar, and the fact may as well be made clear in the reproductions which I am issuing.

In a painting of the school of Lucas van Leyden, a detail of which I have published elsewhere,^a the Thirty Pieces are represented by the imitations of the Jewish shekel which became popular early in the sixteenth century. It is curious that neither the genuine Jewish shekel nor this much commoner imitation appears among the actual relics which have been identified. Before the sixteenth century the Jewish shekel was probably quite unknown in Europe; and doubtless most of the relics which we have discussed were acquired much earlier. Nevertheless it seems puzzling that no shrine availed itself in the sixteenth century of these imitations, which were undoubtedly regarded as genuine by the vast majority of people, then as now.

Having dealt with matters of fiction, it would be unreasonable did we not attempt to satisfy ourselves on the much more prosaic question as to what were the coins actually in circulation in Judæa in the time of Christ. Our choice lies practically between two kinds of silver coin.^b

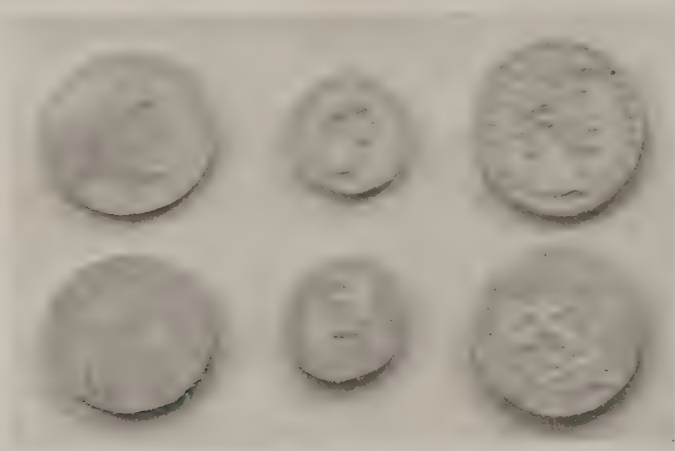
The piece which both English versions of the New Testament call a "penny" was the ordinary Roman silver denarius, worth about 9½d. The specimen here illustrated (fig. 5) shows on the obverse the laureate "image" of the Emperor Tiberius with his "superscription" ΤΙ(berius) CAESAR DIVI AVG(usti) F(ilius) AVGVSTVS; on the reverse is the Empress Livia seated, and the inscription PONTIF(ex) MAXIM(us), completing the titles of Tiberius.

But it is much more probable that we have to look for the Thirty Pieces of Silver in another kind of coin, corresponding in weight to the shekel. Such coins were not issued at this time by any mint in Judæa itself; but the large silver four-drachm pieces of the mint of Tyre, weighing from 224 to 220 grains troy, and often less than this, were in common circulation. There were also coins,

^a *Reliquary and Illustrated Archæologist*, x. (1904), 135.

^b M. de Villenoisy, by a curious reversion to the argument of Godfrey of Viterbo, suggests that the coins described by St. Matthew as τὰ τριάκοντα ἀργύρια (*triginta argenteos*) were really gold pieces, on the ground that *argentum*, *argenteus* had become synonymous with "money," without regard to the metal. This may be true of the collective noun τὰ ἀργύρια, but I do not think it can be proved of τὰ ἀργύρια in the sense of separate pieces of money. The author of the *Narratio* of Joseph of Arimathea was, however, of M. Villenoisy's opinion; for Mr. Herbert calls my attention to the fact that according to this work (edited by Tischendorf, *Evang. Apocr.*, 1853, p. 440, from a twelfth-century and other MSS.) the Jews bribed Judas with τριάκοντα ἀργύρια χρυσίου. Of course no argument can be based on evidence of this date.

struck at the great city of Antioch on the Orontes, of which the weight sometimes rises as high as 236 grains troy. Such coins of Tyre or of Antioch are meant by the "staters" mentioned in the New Testament. Fig. 6, a four-drachm piece of Tyre, has on the obverse a laureate head of the Phœnician god Melkarth, who appears in his Hellenised form of Herakles. On the reverse is an eagle standing on the prow of a vessel, with a palm branch over its shoulder; around is the name of the city, "Tyre the sacred and inviolable sanctuary." In front of the bird is a club, the emblem of the god whose head appears on the obverse. In the field of the coin are also a date (corresponding in this case to 11 B.C.) and a monogram differentiating this issue from others.



6 5 7
Figs. 5-7. Denarius of Tiberius and Staters of Tyre and Antioch.

The staters of Antioch are better works of art than those of Tyre. On the obverse of the specimen in fig. 7 is a fine laureate head of Augustus, with the Greek inscription "of Cæsar Augustus." On the reverse is represented the famous personification of the City of Antioch by the sculptor Eutychides: a female figure, wearing a mural crown, and holding a palm branch, seated on a rock; at her feet is a half-figure of the river god Orontes in a swimming attitude. The inscription around identifies the piece as a coin "of the metropolis of the Antiochians," and letters in the field fix its date to A.D. 11.

To one of these two classes, Tyrian or Antiochian, then, belonged not only the stater which was taken out of the mouth of the fish, and which, being equivalent in weight to a shekel, was sufficient to pay the tax for two people; but also probably the thirty pieces of silver, which altogether must have been equivalent to something between £4 10s. and £5 in our money.

XIII.—*Some Notes on Fourteenth Century Conveyancing.* By T. F. KIRBY, Esq.,
M.A., F.S.A.

Read 23rd February, 1905.

THE thing that struck me most when I began to handle documents of this period at Winchester College was the number of instruments that go to complete a sale of land. Nowadays, one multipartite deed suffices for the conveyance of any quantity of land. At the time that I am speaking of deeds were, generally speaking, unipartite, and perhaps half a dozen feoffments, letters of attorney, releases, and deeds of confirmation were required to produce the same result. In the fourteenth century, and for many years on either side of it, the transfer of freehold property was effected by "livery of seisin," that is, by delivery of the feudal possession, preceded by a writing on parchment, called a feoffment, which transferred to the purchaser the right to the feudal possession. The feoffor set his seal in the presence of witnesses to a writing, averring that he had given and confirmed the property to the feoffee and his heirs, and that the feoffor and his heirs would warrant, acquit, and for ever defend the feoffee and his heirs against all comers. This warranty of title gave the feoffee a right of action against the feoffor in case of disturbance, and was superseded in due course by covenants for title.

As soon as the feoffment had been sealed by the feoffor in the presence of witnesses, the feoffor let the feoffee into actual possession of his purchase, inducted him, I may say, after the manner in which an archdeacon inducts a

parson, after institution, to a vacant benefice, and the feoffee's title was then complete. Publicity was the essence of every man's title in those early days. Whenever a house or a field changed hands, all the parish knew it. Feoffments often bear date on a Sunday, because it was so easy to get the most respectable, churchgoing parishioners to attest them after morning mass.

Partly as an example of a transaction of this nature, and partly for the sake of the seals attached to it, I give the following example of a feoffment in its simplest form. William of Wykeham acquired a moiety of the manor of Coombe Bissett in Wiltshire, and endowed with it the warden and scholars of his new College at Winchester. He had had to obtain a Crown licence to do this, because it was held of the Crown *in capite*, and property so held could not be alienated without leave of the Crown:

Sciant presentes et futuri quod nos, Willelmus de Wykeham, permissione divina Wyntoniensis episcopus, de licencia domini regis dedimus, concessimus, et hac presenti carta confirmavimus dilectis nobis in Christo Magistro Thome Cranleye, custodi collegii vocati Seinte Marie College of Wynchestre prope civitatem Wyntoniam et scolaribus eiusdem collegii per nos nuper fundati medietatem manerii de Combe Byset cum pertinenciis in Comitatu Wiltes.

Habendum et tenendum medietatem predicti manerii cum pertinenciis prefatis custodi et scolaribus et eorum successoribus de domino Rege et heredibus suis in puram et perpetuam elemosinam imperpetuum. Et nos vero dictus episcopus et heredes nostri medietatem predicti manerii cum pertinenciis prefatis custodi et scolaribus et eorum successoribus contra omnes gentes warantizabimus imperpetuum. In cujus rei testimonium &c.

Witnesses, Sir Hugh Cheyne, knt.; Nicholas Bevington; John Lighe; Henry Gilbert; John Dekene, and others.

Dated 1 October, 9 Richard II. (1385).

Livery of seisin was often, as in this case, effected by attorney. This is the letter of attorney to deliver seisin:

Pateat universis per presentes nos Willelmum de Wykeham etc. attornasse et loco nostro posuisse dilectum nobis in Christo Johannem Deakene ad liberandum pro nobis et nomine nostro dilectis nobis in Christo magistro Thome Cranleye custodi Collegii vocati Seinte Marie Collegie of Wyncestre prope civitatem Wyntoniam et scolaribus ejusdem collegii per nos nuper fundati plenam et pacificam seisinam de medietate manerii de Combe Byset cum pertinenciis in Comitatu Wiltes.

Habendum et tenendum predictam medietatem manerii de Combe Byset cum pertinenciis prefatis custodi et scolaribus et successoribus suis imperpetuum juxta vim, formam et

effectum cujusdam carte nostre eisdem inde confecte : Ratum et gratum habituri quicquid idem Johannes nomine nostro fecerit in premissis.

In cujus rei testimonium etc.

Dated 2 October, 9 Richard II. (1385).

The warden and scholars likewise sealed a power of attorney appointing Croucheston, the senior fellow, and John Melton, the schoolmaster, to receive seisin on their behalf. The point about it is, that it is not sealed with the corporate seal of the College, but with two private seals, one standing for the warden, the other for the scholars, I suppose because the corporate seal was not at hand.^a

Here is an earlier example of a feoffment. It is by Henry Woodlock, bishop of Winchester 1304-1316, granting a free tenement in the bishop's manor of Clere (Highclere), Hants. The seal is a fine example of Woodlock's episcopal seal :

Sciant presentes et futuri quod nos frater Henricus permissione divina Wyntoniensis Episcopus dedimus et concessimus et hac presenti Carta nostra confirmavimus Cristine que fuit uxor Ricardi de Brokhurst unum mesuagium et unam virgatam terre que fuerunt predicti Ricardi de Brokhurst in Echeneswell ^b cum omnibus suis ubique pertinentiis. Et eciam unam virgatam terre que quondam fuit Walteri le Mareschal in eadem villa cum omnibus suis pertinentiis. Dedimus eciam eidem Cristine dimidium cotagium ^c quod quondam fuit Ricardi Kaynel in eadem villa cum omnibus suis pertinentiis.

Habendum et tenendum predicta messuagium et virgatam terre et dimidium cotagium cum omnibus suis pertinentiis, ut predictum est, predictæ Cristine heredibus et assignatis suis de nobis et successoribus nostris liberè quietè et in pace jure et hereditario imperpetuum.

Reddendo inde nobis et successoribus nostris viginti et quinque solidos et tres denarios sterlingorum pro omnibus serviciis consuetudinibus et demandis, salvis nobis et successoribus nostris herietis, releviis, escaetis et secta de tribus septimanis in tres septimanas ad Curiam nostram de Clere. Et nos predictus Henricus et successores nostri omnia predicta tenementa cum omnibus pertinentiis ut predictum est predictæ Cristine heredibus et assignatis suis contra omnes gentes warantizabimus acquietabimus et defendemus inperpetuum. Hiis testibus, etc.

Dated at Southwark, 16 Kal. September, 1311.

Grants in fee simple, reserving a perpetual rent, are not now common, having been superseded by leases for 999 years and similar terms. But at the time that I am speaking of they were common. Here is an example of a grant in fee farm of a house in Winchester by the abbot and convent of Hyde :

^a Our Fellow, Mr. G. H. Blakesley, has referred me to *Archæologia*, lviii. 345, where a similar case is noted. The sealing was of the essence, it mattered little what seal was used.

^b This holding is situate at Brock's Green, in the parish of Ecchinswell, and known as Brock's.

^c One of two cottages under one roof.

Noverint presentes et futuri quod ego Walterus, Dei gracia abbas de Hida, et ejusdem loci conventus, concessimus et in feodo firma tradidimus Andree Beaubelet domum nostram cum pertinenciis que fuit Alwini Draparii et Constancie uxoris ejus, que est in Wintonia juxta capellam Sancti Clementis, habendum et tenendum sibi et heredibus suis de nobis et successoribus nostris jure hereditario liberè, quietè, et integrè.

Reddendo inde nobis ad operacionem monasterii annuatim pro omni servicio ad nos pertinente decem et novem solidos ad quatuor anni terminos, videlicet ad festum Sancti Johannis Baptiste quinque solidos, ad festum Sancti Michaelis quinque solidos, ad Natale Domini quinque solidos et ad pascha quatuor solidos, et ecclesie Sancti Swithuni octo solidos ad dictos terminos equalibus porcionibus annuatim nomine terragii^a solvendos.

Dictus vero Andreas et heredes sui debent omnia honora que rationabili civitatis consuetudine super eandem domum accidunt sustinere.

Sin autem contigerit quod dictus Andreas, vel aliquis heredum suorum, debitum censum ad dictos terminos non reddiderit, sine contradiccione liberum erit nobis in totum tenementum illud intrare, et de eo cum omni emendatione, quam ipse Andreas vel heredes sui super illud posuerunt, juxta rationabilem voluntatem nostram ordinare.

Ut hec autem nostra concessio et in feodo firma tradicio firma et inconcussa permaneat hoc scriptum in modo cirographi factum mutuis sigillis signavimus.

Pro hac autem concessione et confirmacione dedit nobis predictus Andreas in gersumam unum bisantium. Hiis testibus: Helia Westman, tunc maiore Winton.; Will. parvo et Herbert. silver, tunc prepositis: Alano de Hereford, tunc senescallo de Hida: Petro de Hattingele;^b Rogero de Cham, tunc aldermanno magni vici; Nich. Cuppyng; Nich. Kutell; Joh. de Chartres; Briano de Garstret; Achard, marescallo domini episcopi: et aliis.

Where there was a widow entitled to dower out of the lands agreed to be sold, a release by the widow was necessary. In the case which I am about to mention, Agnes, daughter and heiress of John le Taylour, enfeofed William Brokhurst and Cristina his mother of a curtilage with the appurtenances in Kingsclere, and Taylour's widow executed the following release:

Omnibus Christi fidelibus ad quod presens scriptum pervenerit Margareta que fui uxor Johannis le Taylour de Kyngesclere salutem in Domino. Noveritis me in libera potestate et ligea viduitate mea concessisse, remisisse, et omnino imperpetuum quietum clamasse Willelmo Brokhurst et Cristine matri sue totum jus et clameum meum quod habui vel aliquo modo habere potui racione dotis in uno curtilagio cum suis pertinenciis in Kyngesclere (parcels).

^a This "terrarium" or "tarrage" was a species of local land tax, or ground rent, here payable to the cathedral church, but usually meaning the quota levied to make up the fee farm rent payable to the Crown for the City.

^b A hamlet in parish of Medstead, 12 miles N.E. of Winchester.

Habendum et tenendum predictum curtilagium etc. cum suis pertinenciis predictis Willelmo et Cristine et heredibus ipsius Willelmi de capitalibus Dominis feodi illius liberè quietè et jure hereditario imperpetuum. Ita quod nec ego predicta Margareta nec aliquis per me vel pro me vel nomine meo aliquid juris vel clamei in predicto curtilagio . . . cum suis pertinenciis exigere vel vindicare poterimus in futurum.

In cujus rei testimonium etc.

Dated at Kingsclere on the Wednesday after the Circumcision, 4 Edward III.

Where, as in the last case but one, the payment of rent or any other condition was attached to the transfer, it was usual to make an indenture between the parties. That is, two copies of the feoffment were written upon the same piece of parchment, with some letters of the alphabet written large in the space between them, through which the parchment was cut with scissors in a waved or indented line, so as to leave half the letters on one part and half on the other, to serve as a tally.

I have an indented deed between the abbot of Hyde and one who bought a house at Alton, in Hampshire, subject to a stipulation that he should not be at liberty to resell to a professed person or to a Jew. This limited restraint on the right of free sale is good in law (Coke, Inst. 223b), and occurs in other documents in the same series.

Sciunt etc. quod anno Verbi Incarnati m^cclx sexto ita convenit inter Willelmum abbatem et conventum de Hyda ex una parte, et Nicholaum Marescall ex altera, scilicet quod predicti abbas et conventus dederunt, concesserunt, et hoc presenti scripto in modo cyrographi confecto confirmaverunt eidem Nicholao quoddam messuagium in villâ de Aweltone. . . . Habendum et tenendum liberè, quietè, integrè, bene et in pace predicto Nicholao et heredibus suis, vel cuicunque dare, vendere, assignare vel impignorare voluerit, exceptis Judaysmo et domibus religiosis et omnibus aliis locis, pretextu quorum jus vel redditus dictorum abbatis et conventûs posset deperire et abstrahi.

Reddendo inde annuatim ipse vel heredes sui vel assignati predictis abbati et conventui sex solidos sterlingorum ad quatuor terminos anni, scilicet ad Natale Domini octodecim denarios, ad Pascha octodecim denarios, ad festum Sancti Johannis Baptiste octodecim denarios, et ad festum Sancti Michaelis octodecim denarios, pro omnibus serviciis et secularibus demandis ad predictos abbatem et conventum et successores eorum pertinentibus, salvo servicio domini regis que pertinet ad tantum tenementum in eadem villa.^a

Pro hac autem donacione, concessione et presentis carte confirmacione dedit dictus Nicholaus dictis abbati et conventui unam marcam pre manibus.

^a This was the "tarrage" or proportion of the fee farm referred to above.

Dicti vero abbas et conventus et successores eorum dicto Nicholao et heredibus suis predictum messuagium cum omnibus pertinenciis suis warantizabunt acquietabunt et defendent per predictum servicium contra omnes homines et feminas.

Ut autem hec donacio, concessio, et presentis scripti confirmacio rata et stabilis imperpetuum permaneat, tam predictus abbas et conventus quam sepedictus Nicholaus sigilla sua sub alternacione apposuerunt.

Hiis testibus: Domino Ada de Gurdon;^a Johanne de Valletorta; Ricardo de la Bere; Johanne de la Bere; Elya Marescallo; Henrico Wyard;^b Radulpho de Bello; Nicholao Wele; Johanne de Aweltone, et aliis.

Here is an example of a grant to a religious house to endow the obit or anniversary of the grantor. It is endorsed with the date 1266:

Sciant etc. quod ego Simon Draparius, civis Wintonie, dedi, concessi et hac presenti carta mea confirmavi pro anima. Ele quondam uxoris mee et animabus parentum et benefactorum nostrorum deo et ecclesie beati Petri de la Hyde Willelmo abbati et ejusdem loci conventui ad fabricam ecclesie memorate quondam aream meam super montes Sancti Egidii extra Wintoniam cum edificiis superpositis et aliis pertinenciis suis, quam emi de Nicholao le Tayllur, et quam idem Nicholaus habuit de dono Adomari quondam episcopi Wintoniensis, et extendit se in longitudine tam versus vicum qui vocatur "le Especerie" quam vicum de Bristoll.

Habendum et tenendum dictam aream cum edificiis et pertinenciis predictis dictis abbati et conventui, ecclesie sue, et eorum successoribus liberè, quietè, hereditariè absque calumpnia mei vel heredum meorum imperpetuum, faciendo inde domino episcopo Wintoniensi servicia debita et consueta.^c

Custos vero fabrice dicte ecclesie qui pro tempore fuerit solvet conventui predicto de fructibus dicte aree provenientibus singulis annis die obitus dicte Ele viginti solidos nomine pytancie ad anniversarium suum, prout decet, faciendum, et si quod fuerit residuum, in utilitatem fabrice dicte ecclesie per manum dicti custodis convertatur.

Et ego dictus Symon et heredes mei dictam aream cum suis pertinenciis dictis abbati, conventui, et eorum successoribus contra omnes mortales warantizare et defendere tenemur imperpetuum.

Et ut hec mea donacio, concessio, presentis carte confirmacio, et warancia robur stabilitatis futuris temporibus optineat presentem cartam sigilli mei impressione roboravi.

Hiis testibus: Domino Waltero de la Brigg, thesaurario de Wulvesey; Johanne le Blunt, tunc senescallo de Soka Wintonie; Benedicto fabro, tunc aldermanno; Roberto le

^a Sir Adam de Gurdon, who was outlawed for his part in the barons' war, and was defeated in single combat by Prince Edward, who reversed his outlawry on coming to the throne.

^b Lord of Wyards, a small manor $1\frac{1}{2}$ mile north of Alton town.

^c The site was held of the Bishop of Winchester as lord of the Soke manor.

Val; Henrico de Dernegate, tunc senescallo de Hyda; Ada de Norhamptone,^a Henrico Cobbe, tunc prepositis civitatis Wyntonie; et aliis.

Here is a grant in free alms for the benefit of the souls of the grantor and his wife:

Sciant etc. quod ego Edmundus carectarius de Hyda, dedi, concessi et hac presenti carta mea confirmavi Deo et sanctis Andree et Marie Magdalene, et altari eorundem sanctorum in ecclesia beati Barnabe de Hyda ad luminare ejusdem pro salute anime mee et Johanne uxoris mee in puram et perpetuam elemosinam duodecim denarios annui redditus ad festum Sancti Michaelis percipiendos de quodam messuagio super montes Sancti Egidii extra Wintoniam. Quod quidem messuagium situm est inter domum que fuit aliquando Petri Horsenemayn ex parte occidentali et domum Helie rectoris ecclesie Sancti Johannis ex parte orientali: quod quidem tenementum dictus Petrus tenet ex vendicione et concessione mea.

Et ut hec mea donacio, concessio et presentis carte confirmacio perpetue firmitatis robur optineat, presentam cartam sigilli mei appositione communivi.

Hiis testibus: Nigello, tunc senescallo de Soka; Nicholao Hatchard; Roberto le Bal; Johanne patre eius; Benedicto fabro; Johanne le Taylur; Johanne Belemayne; Roberto Bruman; Ricardo filio eius; Willelmo Stigaunt; et aliis.

Here is a grant by a widow to the husband of her daughter in frank-marriage:

Sciant etc. quod Johanna quondam uxor Willelmi de Chilmark in mea legitima viduitate dedi, concessi et hac presenti carta mea confirmavi Johanni Bischof in liberum maritagium cum Editha filia mea totum illud tenementum quod habui ad mercatum socularium^b (parcels). Habendum et tenendum predictum tenementum cum omnibus suis pertinenciis dictis Johanni et Edithe et heredibus suis de corpore ipsius Edithe legitimè procreatis de me et heredibus meis vel meis assignatis liberè, quietè, bene et in pace jure et hereditario, imperpetuum.

Reddendo inde annuatim mihi et heredibus meis vel meis assignatis predicti Johannes et Editha et heredes sui de corpore ipsius Edithe legitimè procreati unam rosam in festo nativitatis sancti Johannis Baptiste pro omni servicio et consuetudine et exaccione ad me et ad heredes meos seu assignatos inde proveniente, et faciendo inde pro me et heredibus meis et meis assignatis dicti Johannes et Editha, et heredes sui de corpore ipsius Edithe legitimè procreati capitali domino feodi illius omnia alia servicia inde debita et consueta.

Et ego vero dicta Johanna et heredes mei vel mei assignati dictum tenementum cum

^a Northington, a parish near Alresford, Hants.

^b The shoe-market at Romsey.

omnibus suis pertinenciis dictis Johanni et Edithe, et heredibus de corpore ipsius Edithe procreatis, contra omnes homines warantizabimus et defendemus imperpetuum.

Et ut hec mea donacio, concessio, et presentis carte mee confirmacio perpetue firmitatis robur optineant presentem cartam sigilli mei impressione roboravi. Hiis testibus . . .

Here is a precedent of a grant by deed indented of a life annuity, with power of distress in default of payment :

Omnibus Christi fidelibus ad quos presens scriptum indentatum prevenerit Thomas Wykeham,^a miles, salutem in Domino. Noveritis me prefatum Thomam Wykeham concessisse et hac presenti carta mea indentata confirmasse Margerie, que fuit uxor Johannis Beneyt de Bottele, armigeri, unum annualem redditum decem marcarum annuatim recipiendum de et in omnibus terris et tenementis meis, reversionibus, redditibus et serviciis in Romeseye, Stanbrygg, Okle, Maydenstone, Welles, Asshefold, et alibi infra parochiam de Romeseye in comitatu Suthampton, que quondam fuerunt Johannis Beneyt, mariti dicte Margerie, Habendum et percipiendum predictum annualem redditum decem marcarum prefate Margerie ad terminum vite sue, videlicet ad festum Natalis Domini, Pasche, Nativitatis Sancti Johannis et Sancti Michaelis archiangeli equis porcionibus.

Et si contingat predictum annualem redditum decem marcarum a retro fore vel in parte vel in toto ad aliquod festum predictum per sex septimanas proxime sequentes non solum extunc bene liceat prefate Margerie in omnibus terris, tenementis, redditibus et serviciis, et in qualibet parcella eorundem, distringere et districciones sic captas penes se asportare, abducere et retinere, quousque redditus predictus cum arreragio inde plenariè fuerit satisfactus. In cujus rei testimonium etc.

Dated 1 January, 12 Henry VI. (1433-4).^a

Here is an early example of an indenture of sale, the consideration being a perpetual rent, together with the refusal of the vendor's house at a valuation, if he should ever be compelled to part with it :

Sciant etc. quod ego, Osbertus Floe, vendidi, concessi, et hac presenti carta mea confirmavi Waltero Abbati de Hyda et ejusdem loci conventui unam meam placeam vacuum super montem Sancti Egidii que est in latitudine in fronte viginti quatuor pedum cum tota placea retro usque ad metam australem, exceptis septem pedibus per lineam usque ad eandem metam de exitu capitalis messuagii mei. Ita quod dicta placea juxta dictam metam contineat in latitudine triginta et quinque pedes inter vivam sepem que est inter tenementum Abbatis de Dureforde versus orientem et capitale messuagium meum versus occidentem. Tenendum et habendum dictis abbati et conventui, et eorum successoribus imperpetuum liberè, quietè et integrè jure hereditario.

^a Grandnephew of Bishop William of Wykeham, and his heir. John Beneyt of Botley, for whose widow this provision was made, was of kin to the bishop. See the limitations of his settlement, *post*.

Reddendo inde annuatim michi et heredibus meis novem denarios sterlingorum in nundinis Sancti Egidii pro omni servicio et seculari demandâ.

Et ego Osbertus et heredes mei debent warantizare, acquietare et defendere predictam placeam cum omnibus pertinenciis suis predictis abbati et conventui et eorum successoribus contra omnes gentes.

Et volo et concedo pro me et heredibus meis quod si casus fortuitus super me contingat capitale messuagium vendere vel alienare, volo quod dicti abbas et conventus propinquiores suit empcioni justè et honesto modo, non pro voluntate mea, neque pro voluntate ipsorum abbatis et conventûs, sed per visum proborum et legalium hominum.

Pro hac autem vendicione, concessione, et carte mee confirmacione dederunt michi predicti abbas et conventus duas marcas et dimidiam argenti in magno negocio meo pre manibus.

Ut autem hec mea vendicio concessio et carte mee confirmacio stabilitatis robur optineat presentem cartam sigilli mei impressione roboravi.

Hiis testibus: Domino Helya de Cumbe, tunc constabulario Wolveseye; Nicholao Hatchard, tunc marescallo; Radulpho divite; Roberto le Val; Benedicto fabro; Johanne Aylward; Osberto rufo, rotario, et aliis.

Here is another indenture of sale of a messuage subject to a chief rent, the vendor being (he says) in the hands of the Jews:

Sciant etc. quod ego Johannes de Andever et Petronilla uxor mea dedimus, concessimus, et hac presenti carta mea confirmavimus domino Rogero abbati de Hyda et ejusdem loci conventui quoddam messuagium in suburbio Wyntonie extra portam occidentalem (parcels). Habenda et tenenda sibi et successoribus suis et ecclesie sue de Hyda liberè, quietè, pacificè et integrè.

Reddendo inde annuatim Domino regi ad festum Sancti Michaelis octo denarios pro omni servicio et seculari demandâ.

Pro hac autem donacione, concessione, et presentis carte confirmacione dederunt nobis dicti abbas et conventus ad nostras magnas necessitates, scilicet ad acquietacionem nostram de manibus Judeorum, decem marcas sterlingorum, ex quibus ego Johannes recepi septem marcas et dimidiam, Petronilla uxor mea unam marcam et dimidiam, et Willelmus filius noster unam marcam.

Et ut hec nostra donacio, concessio et presentis carte confirmacio perpetuum robur optineant presentem cartam sigilli nostri appositione roboravimus et ad majorem securitatem sigillo civitatis Wintonie eam fecimus communiri.

Hiis testibus: Willelmo Speciaro, tunc maiore Wintonie; Henrico carnifice et Petro Westman, tunc prepositis; Richard le Leyreys; Johanne Edgar; Nicholao Copping; Hugone Silvester; Waltero Coleman; Ricardo de Lavynton; Ada Muremund; Willelmo Priore, et aliis.

It is observable that in this case the purchase money of ten marks was divided according to the respective interests of the vendors, the husband receiving seven and a half marks, the wife receiving one and a half marks as the contingent reversionary value of her dower, and the son receiving one mark as heir expectant. Without these shares it may be assumed that the wife and son would not have concurred in the sale.

Speaking generally, married women had no power of alienating their freeholds. Alienations by such had to be confirmed by a fine. This was a fictitious action commenced and then compromised by leave of the Court of Common Pleas, the Court at Westminster which had cognisance of questions of property between subjects, whereby the property was acknowledged to be the right of the purchaser, after the woman had been examined apart from her husband in order to ascertain whether she had enfeoffed the purchaser of her own free will. I have here the chirograph or copy of a fine levied in the quindene of St. John Baptist 4 Ric. II. (1380), under the following circumstances. A merchant of Lucca, James del Beel, was seised in right of his wife Amice, aunt and heir of Sir John de Plecy, knt., of the moiety of the manor of Coombe Bisset already referred to, subject to the life interest of Elizabeth, wife of Sir Philip la Vache, a former owner. Having sold their reversion to William of Wykeham, James del Beel and his wife enfeoffed his feoffees, and these are the words of the fine by which the title of the latter was confirmed :

Hec est finalis concordia in curia Domini regis apud Westm. a die Sancti Johannis Baptiste in quindecim dies anno regni regis Ricardi regis Anglie et Francie quarto (1380), coram Roberto Bealknapp, Willelmo de Skipwyth, Rogero de Kirkelm, Rogero de Fulthorp et Henrico de Percehay justiciariis, et postea in octabis sancti Hillarii anno regnorum eiusdem Regis Ricardi supradicto ibidem concessa et recordata coram prefatis Roberto Willelmo Rogero de Fulthorp et Henrico Hasty, justiciariis, et aliis domini regis fidelibus tunc ibi presentibus inter Willelmum de Wykeham episcopum Wyntoniensem, magistrum Johannem de Bukynham, Johannem de Campeden,^a clericum, Robertum Perlee, clericum, Willelmum de Walleworth, civem Londoniensem,^b Willelmum de Worston, Michaellem Skillyng, Willelmum Ryngeborne, et Robertum de Cherletone, querentes, et Jacobum del Beel de Luk., mercatorem, et Amiciam uxorem eius, amitam et heredem Johannis de Plecy, militis, deforciantes, de medietate manerii de Combe Biset cum pertinenciis, quam Philippus la Vache, chivaler,

^a Archdeacon of Surrey and Master of St. Cross Hospital, Winchester. One of the executors of Wykeham's will.

^b Mayor of London in the following year. This is the Sir William Walworth who slew Wat Tyler in the presence of the King, 15 June, 1381, and was knighted for it.

et Elizabeth uxor eius tenent ad terminum vite ipsius Elizabeth Unde placitum convencionis suum fuit inter nos in eadem curia, scilicet, quod predicti Jacobus et Amicia recognoverunt predictam medietatem cum pertinenciis esse jus ipsorum episcopi, magistri Johannis, Johannis, Roberti, Willelmi, Willelmi, Michaelis, Willelmi, et Roberti, et concesserunt pro se et heredibus ipsius Amicie quod predicta medietas cum pertinenciis quam predicti Johannes et Elizabeth tenuerunt ad terminum vite ipsius Elizabeth de hereditate predictæ Amicie die quo hec concordia facta fuerit, et que post mortem ipsius Elizabeth ad prefatos Jacobum et Amiciam et heredes ipsius Amicie remanere debuit, post decessum eiusdem Elizabeth integre remaneat prefatis episcopo etc. tenendum de domino rege et heredibus suis per servicia inde debita et consueta imperpetuum. Et predicti Jacobus et Amicia et heredes ipsius Amicie warantizant predictis episcopo etc. et heredibus suis predictam medietatem cum pertinenciis suis contra omnes homines imperpetuum.

Et pro hac recognicione, concessione, warantia, fine, et concordia iidem episcopus etc. dederunt predictis Jacobo et Amicie centum marcas argenti. Et hec concordia facta fuit per preceptum ipsius domini regis.

Endorsed,

Finis per quem Jacobus del Beel de Luk., mercator, et Amicia uxor ejus concesserunt Willelmo de Wykeham, episcopo Wyntoniensi, et aliis, reversionem medietatis manerii de Coombe Byset quam Philippus la Vache et Elizabeth uxor ejus tenuerunt ad vitam ipsius Elizabethæ.

La Vache and his wife then attorned to the purchasers and did fealty. The attornment, which is in French, I exhibit for the sake of the seals.

I have said that a fine levied in the Court of Common Pleas was generally speaking necessary in order to pass a married woman's estate. But there were places such as London and Winchester in which married women were able to dispose of their estates with the sanction of the local court. Here is an example from Winchester, dated in 1388.

Sciant etc. quod nos, Nicholaus atte More et Margeria uxor mea, unanimi assensu et consensu dedimus, concessimus, et hac presenti carta nostra confirmavimus Thome le Warner, Johanni Hampton de Stoke Charyte, Ricardo Lavyngtone de la Hydestret, et Johanni Barbour seniori, quondam [*sic*] tenementum nostrum etc. quod quidem tenementum nostrum prefata Margeria uxor mea habuit sibi heredibus et assignatis imperpetuum de dono et feoffamento quondam magistri Walteri Gourda, clerici.

Habendum et tenendum totum predictum tenementum etc. predictis Thome, Johanni, Ricardo et Johanni, heredibus suis et assignatis suis, de capitalibus dominis feodi illius per servicia inde debita et de jure consueta, liberè, quietè, bene et pacificè imperpetuum.

Et nos verò predicti Nicholaus et Margeria et heredes nostri totum predictum tenementum etc. contra omnes gentes warantizabimus et defendemus imperpetuum.

In cujus rei testimonium huic presenti carte sigilla nostra apposuimus, et ad majorem hujus rei securitatem sigillum commune civitatis Wynton. presentibus apponi procuravimus.

Witnesses: Richard Chamberlayn, mayor of Winchester; Thomas Smyth, John Peveres, bailiffs; Robert Bullock, alderman of Hyde Street; John Botiller; John Coumpton; John Bramber; John Gervays, and others.

Dated on the Thursday next after the Apostles Peter and Paul, 12 Richard II. (29 June, 1388).

Indorsed,

Lecta fuit presens carta in Curia Civitatis Wynton. tenta ibidem die veneris proximo ante festum translacionis Sancti Martini episcopi anno regni Regis Ricardi secundi post conquestum Anglie duodecimo et irrotulata in rotulo cartarum et universorum scriptorum de eodem anno. Et Margeria infrascripta diligenter examinata cognovit^a quod non fuit per virum suum coacta nec compulsa set spontanea voluntate ratificavit et confirmavit factum viri sui. Et concessa est seisina de tenementis infrascriptis juxta tenorem presentis carte secundum consuetudinem civitatis, salvo jure cujuslibet.

This local custom was recognised by the judges in Alice Payne's case,^b where the judges say, "We tell you, that by the custom of Winchester, where the tenements are, if a husband and wife make a feoffment, and the wife comes into their Court and acknowledges that it is her work, she is barred for ever."

The alienation of lands by will, except in London, Winchester, and a few other favoured places, where a special custom prevailed, was not directly possible before the 32nd year of King Henry VIII. Hence the wills of this period usually deal with personal estate alone, which in those days was limited to household stuff and live and dead stock. I have an example of such a will, that of John Brewere of Romsey, made in 1425. The probate at its foot bears the seal of Langthorn, the commissary. The widow is sole executrix, and the whole of the property is given *ad pios usus*. Brewere was a landowner at Romsey, and his widow was no doubt provided for by her dower. I set out this will as an example of many others:

In Dei nomine Amen decimo die mensis Septembris anno Domini Millesimo cccc^{mo} vicesimo quinto Ego Johannes Brewere ville Romeseye compos mentis et sane memorie existens condo testimonium in hunc modum. In primis lego animam meam Deo sancte Marie

^a Acknowledged. "You gave them a *cognovit* for the amount of your costs after the trial, I am told, said Mr. Jackson." (*Pickwick*, ch. xlv.)

^b Year Book, 18 Edward III. Rolls Series, 376.

et omnibus Sanctis eius corpusque meum ad sepeliendum in cimiterio ecclesie parochialis sancti Laurencii de Romeseye. Item lego fabrice ecclesie Cathedralis Sancti Swithuni Wyntonie xij^d. Item lego domino Johanni perpetuo vicario ecclesie parochialis Sancti Laurencii de Romeseye unum tricennale.^a Item lego duobus clericis parochialibus ibidem cuilibet eorum iiij^d. Residuum vero omnium bonorum meorum non legatorum do et lego Dionysie uxori mee ut ipsa disponat et ordinet pro anima mea ut sibi viderit melius expediri. Ad istud testamentum faciendum bene et fideliter exsequendum ordino, facio et constituo executricem meam Dionysiam uxorem meam supradictam.

Probatum fuit presens testamentum coram nobis, Johanne Langthorn, venerabilis in Christo patris et domini Henrici,^b Dei gracia Wyntoniensis episcopi, commissario et sequestratore generali.

Where the law is not in accordance with public convenience, a loophole is sometimes found. Men got round the law which restrained the devising of estates in fee simple by enfeoffing friends who could be trusted to carry out their wishes. It was probably in the reign of Richard II., says Hallam (*Constitutional History*, c. vi.), that the Chancellor began to establish his jurisdiction to enforce trusts of this kind. I will give one example of such a grant to feoffees, dated 17 Richard II. (1393):

Sciant etc. quod ego, Johannes Forester, de Romesye, dedi, concessi et hac presenti carta mea confirmavi Johanni Walcote, capellano, Rogero Pusye, vicario de Romesye, Thome Bruyn, capellano, et Roberto Poynant omnia terras et tenementa mea, reversiones, redditus, et servicia que habeo in villa de Romesye et extra, cum omnibus suis pertinenciis, omnibus arboribus parvis et magnis circa terras ipsius Johannis Forester crescentibus exceptis, quos idem Johannes penes se reservat ad prosternendum, abducendum, et proficium suum inde faciendum, quociens et quando sibi placuerit, absque calumpnia seu impedimento alicujus feoffati supradicti.

Habendum et tenendum omnia predicta terras et tenementa, reversiones, redditus et servicia, exceptis arboribus supra dictis, prefatis Johanni, Rogero, Thome, et Roberto, et heredibus et assignatis eorum, de capitalibus dominis feodorum illorum per servicia inde debita et consueta.

Et ego verò predictus Johannes Forester et heredes mei omnia predicta terras et tenementa, reversiones redditus et servicia, exceptis arboribus supradictis, prefatis Johanni, Rogero, Thome et Roberto, et heredibus et assignatis eorum, contra omnes gentes warantizabimus et defendemus imperpetuum.

In cujus rei testimonium etc.

I give the following example of a settlement by the feoffees of a deceased

^a A trental or month's mind, viz. the price of thirty days' masses.

^b Henry Beaufort, bishop of Winchester 1404-1447.

person, one Roger Ingepenne, upon his widow, Margery Ingepenne, for life, remainder to his son Richard in tail, remainder to his daughter Isabel in tail, remainder to John de la Ryver, his heirs and assigns.

Sciant etc. quod nos, Hugo Craan, civis civitatis Wynton, Ricardus Colshull, Johannes Kyng et Johannes Gybbes, capellani, dedimus concessimus et hac presenti carta nostra indentatâ confirmavimus Margerie nuper uxori Roberti Inkepenne omnia terras et tenementa nostra redditus et servicia cum omnibus suis pertinenciis que nuper habuimus ex dono et feoffamento dicti Roberti in com. Sutht. Dedimus eciam et concessimus prefate Margerie reversionem omnium terrarum et tenementorum, reddituum et serviciorum, cum omnibus suis pertinenciis, que Isabella mater predicti Roberti tenet ad terminum vite sue in dotem in Bertone Stacy, Gavelacre, Middeltone, et Langeparisshe in comitatu predicto.

Habendum et tenendum omnia predicta terras et tenementa, redditus et servicia cum omnibus suis pertinenciis simul cum reversione omnium terrarum et tenementorum et serviciorum predictorum cum omnibus suis pertinenciis ad totum terminum vite predictæ Margerie de capitalibus dominis feodi illius per servicia inde debita et de jure consueta. Et post decessum prefate Margerie volumus et concedimus quod omnia predicta terras et tenementa cum omnibus suis pertinenciis simul cum reversione predicta cum omnibus suis pertinenciis integrè remaneant Ricardo, filio predictorum Roberti et Margerie, et heredum de corpore suo legitimè procreatorum, Tenendum de capitalibus dominis (ut supra). Et si contingat predictum Robertum sine heredibus de corpore suo legitimè procreatis obire, tunc volumus et concedimus quod omnia terras etc. (ut supra) integrè remaneant Isabelle, sorori predicti Ricardi, et filie predicti Roberti, et heredibus de corpore suo legitimè procreatis Tenendum de capitalibus (ut supra). Et si contingat predictam Isabellam sine heredibus de corpore suo legitimè procreatis obire, tunc volumus et concedimus quod omnia predicta terras et tenementa cum omnibus suis pertinenciis simul cum reversione predicta cum omnibus suis pertinenciis integrè remaneant Johanni de la Ryver, filio Thome de la Ryver, heredibus et assignatis suis imperpetuum. Tenendum etc. (ut supra).

In cujus rei testimonium etc. Witnesses: Bernard Brocas, John Sonde, Sir Thomas Wortynge, knt., Thomas Warner, John Wayte, John Hampton, William Overton, Jasper Wodelok, John Tank, and others.

Dated Thursday after Conversion of St. Paul, 12 Richard II. (1389).

In the City of London, however, and in a few favoured places, such as Winchester, lands might be devised by will in virtue of a special custom. I have an example from Winchester, the will of Hugh Cran,^a dated 20th April, 1401, and proved in the Prerogative Court on the 14th December following. We have heard of him already as one of the feoffees of Roger Inkepenne, and I am disposed to conjecture that he married his widow. The will comes from the Hyde Abbey

^a He was mayor of Winchester in 1358, 1366, and 1370.

series at Winchester College. Cran specifically devised the house in which he lived and a quantity of other house property to his wife Isabel for life, remainder to John de la Ryver, his heirs and assigns; the rest of his landed estate to be sold by his executors after his widow's death, and the proceeds of sale to be applied *ad pios usus*. The will is endorsed with a memorandum to the effect that it was read and enrolled at a Boroughmote held on the Decollation of St. John Baptist, 3 Hen. IV., and that seisin was granted to the widow "per visum aldermanni vici."

I now come to mortgages. The earliest form, I think, of a charge on land is the *vivum vadium* or living pledge (Blackstone, Book II. ch. x), where a man enfeoffs another of his estate to hold until the rents and profits shall have repaid the sum borrowed. This is what is sometimes called a Welsh mortgage. Here is an example of the year 1349 :

Die Lune proxima ante festum Sancti Martini Episcopi, anno regni regis Edvardi vicesimo tercio, convenit inter Matildam Thurmond ex parte una et dominum Symonem de Wynton, ex altera, videlicet quod predicta Matilda tradidit, dimisit et concessit predicto Symoni unum messuagium cum sex acris et dimidia terre et omnibus suis pertinenciis quod tenuit in dotem in villa de Wyk. juxta Wyntoniam ad terminum sex annorum proximo sequencium plenariè completorum.

Tenendum sibi et heredibus suis vel suis assignatis per predictum terminum pro viginti et octo solidis sterlingorum in quibus predicta Matilda sibi tenetur ex mutuo.

Reddendo inde annuatim priori Sancti Swithuni Wynton. tres solidos et sex denarios ad festum Sancti Martini episcopi predicti durante termino predicto pro omni servicio et seculari demandâ.

Et si contingat (quod absit) predictam Matildam infatam (sic) discedere infra terminum predictum, tunc concedit et vult quod executores sui nullam habeant potestatem ordinandi, distribuendi, nec acquietanciam faciendi, antequam iidem executores predicto Symoni et heredibus vel assignatis suis de residuo debiti predicti jure rationabili satisfecerint. In cuius rei testimonium, etc.

A commoner way was by feoffment absolute, accompanied by a "defeasance" or instrument making the feoffment void in the event of payment by a day certain. This was the "mortuum vadium" or mortgage. Here is an example of the year 1331 :

Sciant etc. quod ego, Johannes Ottewerthe de Kyngesclere, dedi, concessi et hac presenti carta mea confirmavi Willelmo Brokhurst pro quadam summa pecunie in manibus soluta sex acras terre mee cum suis pertinenciis in campis de Kyngesclere. . . . Habendum et tenendum

predictas sex acras terre cum suis pertinenciis predicto Willelmo, heredibus et assignatis suis, de capitalibus dominis feodi illius liberè quietè et jure hereditario per servicia inde debita et consueta imperpetuum. Et ego predictus Johannes et heredes mei predictas sex acras terre cum suis pertinenciis predicto Willelmo heredibus et assignatis suis contra omnes gentes warantizabimus et defendemus imperpetuum.

In cujus rei testimonium etc.

Dated at Kingsclere on Monday, St. John Baptist's day, 5 Edward III.

This was the defeasance, which bears the same date as the feoffment, and in later years would have formed part of the mortgage deed:

Noverint universi ad quos presens scriptum pervenerit, quod cum Johannes Otteworthe nuper dederit, concesserit et per cartam de feoffamento confirmaverit Willelmo Brokhurst sex acras terre cum suis pertinenciis in campis de Kyngesclere, habendum et tenendum sibi et heredibus suis juxta tenorem predictæ carte imperpetuum: Noveritis eciam quod si predictus Johannes vel ejus attornatus solvat predicto Willelmo vel suo certo attornato in ecclesia beate Marie de Kyngesclere centum et quindecim solidos et quinque denarios sterlingorum in festo omnium Sanctorum et in festo Natalis Domini proximè sequentibus post datam presentis scripti per equales porciones, extunc predicta carta feoffamenti predicti vacua sit et pro nulla existat, et predictæ sex acre terre cum suis pertinenciis predicto Johanni vel heredibus suis in feodum venient.

Et si predictus Johannes de solucione predicta ad terminos prenomatos in parte vel in toto deficiet, extunc predicta carta feoffamenti predicta perpetuum robur obtineat, et predictæ sex acre terre cum suis pertinenciis predicto Willelmo vel heredibus suis remaneant imperpetuum.

In cujus rei testimonium etc.

Here is another defeasance, providing for the repayment of the loan by instalments:

Hec indentura testatur quod cum Thomas Barbour de Basyngstoke dederit et per cartam suam feoffaverit Waltero Waryn de eadem in omnibus terris et tenementis suis in Basyngstoke, ut in quadam carta inde dicto Waltero facta plenariè apparet, cuius carte data est die lune in festo Sancti Hillarii, Tamen predictus Walterus vult et concedit, pro se heredibus et executoribus suis, quod si prefatus Thomas aut aliquis alius nomine suo solvat seu solvi faciat predicto Waltero aut suo certo attornato quinque libras legalis monete Anglie infra quinque annos proximò futuros post festum Sancti Michaelis proximò futurum post datam presencium, videlicet quolibet anno xx^s, videlicet x^s prime solucionis in festo Sancti Michaelis proximò futuro post datam presencium et x^s in festo Pasche tunc postea proximò sequenti, et sic de anno in anno ad festum predictum, donec plena solucio pre-

dictarum quinque librarum predicto Waltero fuerit satisfacta, quod extunc predicta carta feoffamenti cum seisina careat suo vigore et pro nulla habeatur.

Sin autem prefatus Thomas vult et concedit, pro se, heredibus et executoribus suis, quod si ita contingat, quod idem Thomas defecerit de aliqua solucione ad aliquod festum supra limitatum, quod extunc predicta carta feoffamenti cum seisina stet in suo robore et officio. In cujus rei testimonium etc.

Dated at Basingstoke on Saint Hilary's day, 8 Henry V. (13 January, 1420-1).

When the money was paid by the appointed day a release was usually taken for the protection of the mortgagor. When the money was not paid until after the appointed day a reconveyance became necessary. Here is an example :

Sciant etc. quod ego, Walterus Waryn de Basyngstoke, dedi, concessi et hac presenti carta mea confirmavi Willelmo Fox, alias dictus Barbour, filio et heredi Thome Fox de Basyngstoke omnia illa terras et tenementa cum omnibus eorum pertinenciis que nuper habui ex dono et concessione predicti Thome in villa et campis de Basyngstoke, et que michi prefato Waltero et heredibus meis forisfuerunt (*sic*) causa non solucionis quinque librarum in morgagio, prout in quibusdam indenturis inde inter me prefatum Walterum et predictum Thomam factis plene liquet.

Habendum et tenendum omnia predicta terras et tenementa cum omnibus eorum pertinenciis prefato Willelmo et heredibus de corpore suo legitimè procreatis de capitalibus dominis feodi illius per servicia inde debita et de jure consueta.

Et si contingat dictum Willelmum absque heredibus de corpore suo procreatis decedere, quod tunc omnia predicta terras et tenementa, cum eorum ubique pertinenciis, rectis heredibus predicti Thome remaneant imperpetuum, tenendum de capitalibus dominis feodi in firma predicta.

In cujus rei testimonium etc.

Dated at Basingstoke on St. Gregory's day, 7 Henry VI. (12 March, 1428-9).

Indentures of exchange, by which two persons severally seised of lands mutually enfeoff each other, are not uncommon. Here is an example of one dated in the year 1266 :

Anno ab Incarnacione domini MCCLX. sexto ad festum purificationis beate Marie virginis fuit hec convencio facta inter fratrem N. priorem de Enedewelle ex parte una et Matheum filium domini Jacobi de Escures ex altera, videlicet, quod dictus Matheus dedit, concessit et quietum clamavit pro se et heredibus suis dicto N. priori de Enedewelle et monachis ibidem comorantibus, et omnibus suis successoribus imperpetuum, unam acram terre sue cum omnibus suis pertinenciis in villa de Hupnateleghe que quidem acra vocatur Meracre . . . et pro hac donacione et concessione dedit dictus M. prior dicto Matheo in excambium unam acram

terre sue in eadem villa que vocatur Perelacre quam quidem acram terre cum omnibus suis pertinenciis dictus N. prior dedit, concessit et quietum clamavit pro se et successoribus suis dicto Matheo et heredibus suis vel quibuscunque ejus assignatis imperpetuum.

In cujus rei testimonium partes presenti scripto in modum cyrographi collecto sigilla sua apposuerunt..

Witnesses: Sir Ralph de Basing, Sir Martin de Westrope, knts.; Jordan de Westrope, Michael Martin, Philip le Vezie, John de la Hale, John Germain, John Ibernassie, John le Frances, Henry de Louce, and others.

As regards settlements, I have given an example of a grant in frank marriage, and of a settlement by the feoffees of a deceased person upon his widow and children. I will now give a somewhat more elaborate example of a similar *post mortem* settlement of later date. Here is the feoffment by the settlor, followed in three months by the settlement, the death having occurred meanwhile:

Sciant etc. quod ego, Johannes atte Nasshe de Basyngstoke, dedi etc. domino Radulpho Burgeys, perpetuo vicario ecclesie parochialis ibidem, et Thome Ayllward de eadem, omnia terras et tenementa mea, redditus et servicia, cum omnibus eorum juribus et pertinenciis universis que habeo die confeccionis presencium in villa (et) pratis de la Wildemoure sive in campis de Basyngstoke predicta.

Habendum et tenendum omnia predicta terras et tenementa, redditus et servicia, cum omnibus eorum juribus et pertinenciis universis, predictis Radulpho et Thome, eorum heredibus sive eorum assignatis, de capitalibus dominis feodi illius per redditus et servicia que inde debentur imperpetuum Et ego etc. (warranty). In cujus rei testimonium etc.

Dated at Basyngstoke, 18 March, 11 Henry IV. (1409-10).

This is the settlement:

Sciant etc. quod nos Radulphus Burgeys, vicarius de Basyngstoke, et Thomas Ayllward de eadem dedimus etc. Margarete Sterlyng que fuit uxor Johannis atte Nasshe de Basyngstoke predicta omnia terras, tenementa et prata cum omnibus eorum pertinenciis in Basyngstoke et Wildmoure que nuper habuimus ex dono et concessione supradicti Johannis prout in quadam carta inde nobis confecta plenius apparet.

Habendum et tenendum omnia predicta etc. dicte Margarete ad terminum vite eiusdem Margarete de capitalibus dominis feodi illius per redditus et servicia inde debita et de jure consueta, ut predictum est. Et post decessum dicte Margarete volumus et concedimus per presentes quod omnia predicta etc. remanebunt Willelmo atte Nasshe filio supradictorum Johannis atte Nasshe et Margarete, et heredibus de corpore dicti Willelmi legitimè procreatis, tenendum (ut supra), Et si contingat dictum Willelmum sine heredibus de corpore suo legitimè procreatis obire (quod absit) quod extunc omnia predicta etc. remanebunt Elizabethhe atte Nasshe, filie supradictorum Johannis et Margarete et heredibus de corpore

suo legitimè exeuntibus tenendum (ut supra). Et si contingat (similar limitations to Joan atte Nasshe, a sister, and Henry Moryn, a son of Agnes atte Nasshe, a sister of the settlor).

Sealed by Ingelram atte Moore and William Anne, bailiffs of the liberty of Basingstoke, and others, and dated there on St. John Baptist's day, 11 Henry IV. (1410).

Here is a settlement by a lord of a manor on a man and wife and their issue, remainder in default of issue to the settlor :

Sciant etc. quod ego, Willelmus Fyhide, filius et heres Willelmi Fyhide, dedi etc. Rogero Somonor de Elzevelde (Ellisfield) et Alicie uxori ejus unum curtilagium etc. (parcels).

Habendum et tenendum predictum curtilagium etc. predictis Rogero et Alicie uxori ejus et heredibus de corpore ipsius Rogeri legitimè procreatis, Reddendo inde annuatim michi et heredibus meis duodecim solidos argenti ad duos anni terminos, videlicet ad festum pasche sex solidos et ad festum Sancti Michaelis sex solidos et sectam curie de tribus septimanis in tres septimanas cum herietto quando acciderit pro omnibus aliis serviciis et secularibus demandis, salvo servicio Domini Regis. Et ego etc. (warranty). Et si contingat quod predictus Rogerus obierit sine heredibus de corpore suo legitimè procreatis, tunc predictum curtilagium etc. ad predictum Willelmum, heredes et assignatos suos, integrè revertantur imperpetuum.

In cujus rei testimonium etc. Dated at Ellisfield on the Monday after All Saints, 39 Edward III. (1365).

Seal nearly perfect, a fine impression, 1 inch across, with shield charged with three water-bougets.

The last instrument would perhaps be better described as an endowment "pro servicio et homagio suo" of a dependant, than as a settlement. The next is a real settlement by a man on his son and his son's wife :

Noverint universi quod ego Johannes de Romeseie dedi concessi et hoc presenti scripto meo confirmavi Johanni, filio meo, et Alicie, uxori ejus, omnes terras et tenementa, redditus et servicia, cum omnibus pertinenciis suis que habeo in Westfernham.

Habendum et tenendum predicta terras et tenementa, redditus et servicia, cum omnibus pertinenciis suis predictis Johanni et Alicie et heredibus de corpore eorum legitimè procreatis de me et heredibus meis liberè quietè bene et in pace imperpetuum.

Reddendo inde annuatim michi et heredibus meis unam rosam ad festum nativitatis Sancti Johannis Baptiste pro omni servicio ad me pertinente et faciendo eciam pro me capitalibus domines feodi illius servicia inde debita et consueta.

Ego verò predictus Johannes et heredes mei etc. (clause of warranty).

Et in contingat predictos Johannem et Aliciam sine herede de corpore eorum legitimè

procreato obire (quod absit) tunc predicta terras etc. michi et rectis heredibus meis integrè revertantur. In cujus rei testimonium etc.

Dated at Westfernham, on the Thursday after St. Barnabas, 14 Edward III. (1340).

The next is a settlement by William of Wykeham of the manors of Burnham and Bream, in Somerset, on the occasion of the marriage of his eldest grand-nephew with Alice Uvedale. The settlement on the bishop for life, remainder to the said William Wykeham and Alice Uvedale, and the heirs male of their bodies; remainder to Thomas Wykeham, brother of the said William Wykeham, and the heirs male of his body; remainder to John Wykeham, another brother of the said William Wykeham, and the heirs male of his body; remainder to the heirs of the body of the said William Wykeham; remainder to the heirs of the body of the said Thomas Wykeham; remainder to the heirs of the body of the said John Wykeham; remainder to Thomas Warenner and Joan his wife and the heirs male of their bodies; remainder to William Ryngeborne and Edith his wife and the heirs male of their bodies; remainder to Agnes, widow of Guy Aynho, and the heirs male of her body; remainder to William Maviell and Isabel his wife and the heirs male of their bodies; remainder to John Beneyt of Botley and the heirs male of his body; remainder to the heirs of Joan Warenner; remainder to the heirs of Edith Ryngeborne; remainder to the heirs of Agnes Aynho; remainder to the heirs of Isabel Maviell; remainder to the heirs of John Beneyt; remainder to the right heirs of the bishop.

Provided always that if the intended marriage between William Wykeham and Alice Uvedale shall not be celebrated before Michaelmas next, it shall be lawful for the feoffees of the bishop to re-enter and hold the manors, etc. as of their former estate :

Hec indentura facta inter Reverendum in Christo patrem et dominum, dominum Willelmum de Wikeham, permissione divina Episcopum Wyntoniensem, ex parte una et Nicholaum de Wikeham, Archidiaconum Wiltes, Johannem de Wikeham, personam ecclesie de Crundale, Johannem de Campeden, et Willelmum Ryngeborne ex parte altera, testatur quod dicti Nicolaus et Johannes de Wikeham, Johannes de Campeden et Willelmus de Ryngeborne per presentes concesserunt et dimiserunt dicto domino Episcopo maneria sua de Burnham et Breme in comitatu Som^a cum omnibus suis pertinenciis.

Habendum et tenendum dicta maneria eidem domino Episcopo ad totam vitam suam. Ita quod post mortem dicti domini Episcopi predicta maneria de Burnham et Breme cum suis pertinenciis integrè remaneant Willelmo Wikeham, consanguineo dicti domini Episcopi, et Alicie Uvedale et heredibus masculis de corpore ipsius Willelmi consanguinei legitimè

procreatis. Ita quod &c. (successive limitations in tail male and tail general as above) et si nullus heres de corpore ipsius Johannis Beneyt fuerit procreatus, tunc predicta maneria cum suis pertinenciis integrè remaneant rectis heredibus dicti domini Episcopi imperpetuum. Proviso semper, quod si sponsalia inter dictos Willelmum Wikeham, consanguineum, et Aliciam Uvedale non celebrantur citra festum sancti Michaelis archiangeli proximum futurum, quod extunc bene liceat dictis Nicholao de Wikeham, Johanni de Wikeham, Johanni de Campeden et Willelmo de Ryngborne dicta maneria cum suis pertinenciis reintrare et in pristino statu eorum retinere imperpetuum. In cujus rei testimonium, etc.

Dated 1st July, 20 Ric. II. (1396).

I now come to leases. Leases were then, as now, one of the most important and commonest forms of chattel interest in land. I have not yet come on an example of a lease of land from year to year. Hallam (Const. Hist. ch. xiii.) says that tenancy from year to year is of very recent introduction. But surely there must always have been a class of occupiers of land who were not either lessees for terms of years or lessees for lives. There was a class of tenants at will, no doubt; but tenancy at will, in a country where it takes a year to grow a crop of corn, implies tenancy for one year certain or from year to year. The greater part of the agricultural land of England is cultivated, I believe, by tenants from year to year, and at present I see no reason to doubt that it has been cultivated under similar conditions of tenancy from the earliest times, not written conditions of tenancy, but verbal. This impression of mine is confirmed by the existence of a great number of husbandmen's bonds of the fourteenth century and later. These are single bonds, with no condition expressed, given by husbandmen or tenant farmers to their landlords. With what possible object can such bonds have been given, except the object of securing payment of the rent and proper cultivation of the soil?

I give here an example of one of these bonds, dated on the day of SS. Simon and Jude, 27 Henry VI. :

Noverint universi per presentes nos Jacobum Laneford de Duryngton in comitatu Wiltes, husbondman, Johannem Thurborn de Ambresbury in comitatu predicto, husbondman, et Johannem Hount de Alton in eodem comitatu, husbondman, teneri et per presentes firmiter obligari Roberto Thurbern, custodi collegii vocati seynt Marie College of Wynchestre juxta Wyntoñ, in centum libris bone et legalis monete Anglie, solvendis eidem custodi aut successoribus suis custodibus in festo Natalis Domini proximo futuro post datam presencium. Ad quam quidem solucionem predicto festo bene et fideliter faciendam obligamus nos, heredes et executores nostros, et quemlibet nostrum pro se pro toto et in solido firmiter per presentes. In cujus rei testimonium etc.

Leases for the life of the tenant, or for the lives of the tenant, his wife, and one of his children, are very common. Leases for lives of strangers in blood, selected by the lessee as being good lives, had not, I think, come in in the fourteenth century. At any rate, I have not met with examples of them. It is remarkable that this once so common form of tenancy should now be going out, when it can be made secure by life insurance in a way which was not possible in the days when it was so popular. But even when so secured it is a bad form of tenancy, for landlord as well as tenant.

I have here an example of a very curious lease. It is a lease by a widow to her eldest son of her dower estate for the term of her life in consideration of an annuity of 20s. and board and lodging in the family mansion during the rest of her life, a sort of corrody in point of fact. It is dated at Ellisfield, near Basingstoke, on the Tuesday next after St. Agatha, 47 Edward III. (5 February, 1372-3).

Hec indentura testatur, quod ita convenit inter Aliciam que fuit uxor Roberti Langrede de Elsefelde ex parte una et Thomam filium et heredem predicti Roberti ex parte altera, quod predicta Alicia tradidit, concessit et ad firmam dimisit predicto Thome omnia terras et tenementa sua cum omnibus suis pertinenciis in Elsefelde sancti Martini que eidem Alicie contingunt nomine dotis de libero tenemento predicti Roberti quondam viri sui in eadem villa.

Habendum et tenendum omnia predicta terras et tenementa cum omnibus suis pertinenciis predicto Thome, heredibus et assignatis suis, de capitalibus dominis feodi illius per servicium inde debita et de jure consueta ad terminum vite ipsius Alicie.

Et reddendo inde prefate Alicie et assignatis suis annuatim durante vita ipsius Alicie viginti solidos bone et legalis monete ad quatuor anni terminos principales equis porcionibus. Et quod predictus Thomas, heredes et assignati sui, invenient predicte Alicie victum suum ad terminum vite dicte Alicie ut in potu et cibis prout pro statu ipsius Alicie competenter.

Et predictus Thomas vult et concedit pro se, heredibus et assignatis suis, quod si predictus redditus viginti solidorum durante vita ipsius Alicie ad aliquem terminum prenotatum aretro existat, seu in victu inveniundo prefate Alicie deficiat, quod extunc bene licebit predicte Alicie in omnibus terris et tenementis predicti Thome distringere et districciones per ipsam vel per certum attornatum suum captas abducere, asportare et retinere, quousque de omnibus premissis et eorum arraragiis, dampnis et expensis, si qua sunt, plenariè sit ei satisfactum.

Et preterea predictus Thomas pro concessione et dimissione predicta tenementorum predictorum vult et concedit pro se et heredibus suis quod predicta Alicia habeat et possideat unum solarium cum duobus celariis subtus predicti solarii vocati le Nywechaumbre tegulis coopertum infra citum predictorum in parte boreali edificatum, et unam placeam competentem ubi eidem Alicie placuerit in celario ad finem aule in parte boreali tenementorum

predictorum pro lecto suo ibidem construendo et possidendo, cum libero introitu et egressu per aulam predictam ad cameras et lectum predictas ad totum terminum vite dicte Alicie.

Et pro maiori securitate ad predictas convenciones observandas predictus Thomas obligat se, heredes et executores suos, omnia terras et tenementa sua ac omnia bona sua mobilia et immobilia ad quorumcumque manus devenerint in viginti libris bone et legalis monete, Solvendis predictae Alicie in ecclesiâ Sancti Martini de Elsefelde statim postquam in aliqua parte premissorum defecerit, sine aliqua dilacione. In cujus rei testimonium, etc.

Here is an example of a lease to a man, his wife, and their daughter, for their lives and the life of the survivor of them; a very common form, although the right of pre-emption given to the lessees is special. It is dated at Kingsclere 9th August, 13 Richard II (1382).

Notum sit universis quod nos, Ricardus atte Forde et Alicia uxor mea, de parochia de Kyngesclere, concessimus et dimisimus Johanni atte Hethe, Matilde uxori sue, et Johanne filie eorundem, de Kyngesclere, unum cotagium cum curtilagio adiacente scituatum in villa de Kyngesclere (parcels).

Habendum et tenendum predictum cotagium cum curtilagio adiacente cum suis pertinentiis universis prefatis Johanni, Matilde et Johanne ad totam vitam eorundem et cuiusque eorum diucius viventis. Reddendo inde annuatim nobis et heredibus nostris duos solidos [et] tres denarios legalis monete ad festa Sancti Michaelis et Pasche bene et fideliter per equales porciones solvendos pro omni servicio seculari, exactione et demanda, salvo servicio domini regis.

Et si dictus redditus ij^s et iij denariorum ad aliquem terminum quo solvi debeat aretro sit per quindenam non solutus, tunc bene liceat nobis et heredibus nostris in dicto cotagio cum curtilagio distringere et districciones sic captas penes nos retinere quousque de dicto reddito nobis vel heredibus nostris plenariè fuerit satisfactum.

Et dicti Johannes, Matilda et Johanna predictum cotagium cum curtilagio manutenebunt et sustentabunt sumptibus suis propriis durante vita eorum seu cujusque eorum diucius viventis.

Nec liceat nobis vel heredibus nostris dictum cotagium cum curtilagio cum suis pertinentiis alteri quam prefatis Johanni, Matilde et Johanne durante vita eorum et cuiusque eorum diucius viventis alienare dum tamen ipsi Johannes, Matilda et Johannes tantum voluerint dare, quantum aliquis alius nobis et heredibus nostris optulerit, sub pena centum solidorum bone monete et legalis ipsis Johanni, Matilde et Johanne infra quindenam post alienacionem huiusmodi factam solvendorum. Et nos predictus Ricardus, Alicia et heredes nostri etc. (clause of warranty).

In cujus rei testimonium etc.

Blackstone says (Book ii. ch. ix.) that really long leases, such as leases for 300 years or a thousand years, were certainly in use in the time of Edward II.,

and probably of Edward I., but I have not met with an example, though I have heard of a lease for 10,000 years dated in the latter reign.

Leases for 999 years, which are now preferred to freehold in the Isle of Wight, have replaced feoffments of the freehold at a chief rent, of which an example has been given. I have here an example of a lease for a hundred years to the prior of Andwell, near Basingstoke, but it must, I think, be regarded as something special, inasmuch as all that the prior undertook to do was to assart the land, that is to grub the timber and underwood and bring the land into cultivation, for which a very much shorter term of years would have repaid him. It is dated at Andwell on the Sunday next after St. Gregory, 5 Richard II.

Omnibus Christi fidelibus presens scriptum visuris vel audituris Willelmus Cawon de Upnatelegh salutem in domino sempiternam. Noveritis me tradidisse, concessisse et ad terminum centum annorum pro me et heredibus meis sive executoribus ad firmam dimisisse Galfrido de Lylle, priori de Enedewelle, et fratribus suis sive successoribus, unam acram, etc. (parcels).

Habendum et tenendum dictam acram etc. predicto Galfrido priori et fratribus sive successoribus suis de me et heredibus meis sive executoribus meis liberè, quietè, bene et in pace usque ad terminum predictorum centum annorum proximò sequencium plenariè completorum.

Ita quod liceat dicto Galfrido priori, et fratribus suis sive successoribus suis omnimodas arbores in dictis duabus acris crescentes eradicare et prosternere quancumque sibi placuerit absque alicujus contradiccione, calumpna, seu impedimento mei, heredum meorum, seu executorum meorum. Et si contingat me, heredes meos sive executores meos, predictum terminum centum annorum in aliquo frangere vel contradicere, volo et concedo per presentes quod ego et heredes mei et executores mei obligari dicto Galfrido, fratribus suis sive successoribus suis, in viginti marcis sterlingorum.

Et ego predictus Willelmus Cawon et heredes mei predictam acram etc. cum suis pertinenciis predicto Galfrido priori, et fratribus suis sive successoribus suis, ad terminum centum annorum contra omnes gentes warantizabimus et securè defendemus.

In cujus rei etc.

I have an example of a repairing lease. It is a lease of a shop on St. Giles' Hill, Winchester, for the life of the lessee, and is dated at Hyde Abbey on the day of St. Giles the confessor, 39 Edward III.

Noverint universi quod nos Thomas, abbas Monasterii de Hydâ juxta Wyntoniam, et ejusdem loci conventus, concessimus et dimisimus Ricardo le Spiser de Romesye unam schopam super montem Sancti Egidii . . . habendum et tenendum predicto Ricardo ad terminum vite sue de nobis et successoribus nostris.

Reddendo inde annuatim nobis et successoribus nostris per manus precentoris monasterii predicti qui pro tempore fuerit tresdecim solidos et quatuor denarios argenti, seu eorum valorem in pecunia usuali in vigilia exaltacionis sancte crucis.

Et predictus Ricardus reparabit sumptibus suis propriis omnes defectus schope predictæ, ut de hostiis, fenestris, coopertura, et separacione parietum, et ipsam sic reparatam tota vita sua sufficienter manutenebit.

Et si predictus Ricardus in solucione predicti redditus ad terminum statutum defecerit, vel si edificia dicte schope non reparaverit nec sufficienter manutenuerit, tunc liceat nobis et successoribus in predictam schopam et placeam, ac in omnibus terris et tenementis ipsius Ricardi tam infra civitatem Wyntonie quam extra^a distingere et districcione[m] detinere, donec nobis de premissis plenarie fuerit satisfactum et si districcio sufficiens inveniri non poterit, liceat nobis et successoribus nostris predictas schopam et placeam in manus nostras resumere et pacificè possidere, hac dimissione non obstante, . . . In cujus rei testimonium etc.

Here is an agreement by a man and his wife to pay an increased rent for their house in consideration of a release of the arrears. The house being in Winchester, the wife's separate examination was taken at the City Court :

Sciant etc. quod cum nos Johannes de la Sale et Eva uxor mea domino Roberto abbati de Hyda et ejusdem loci conventui pro tenemento nostro in suburbio Wintonie, videlicet in la Hydestrete in annuis quinque solidis ex predecessorum nostrorum obligacione tenemur, et crebrescentibus incommodis etatis et inopie arreragia dictorum quinque solidorum ad summam viginti solidorum excrescissent, nec nobis suppetit posse dictis viris religiosis de suis arreragiis satisfacere, sic convenit inter nos anno regni regis Edwardi filii Henrici regis undecimo in crastino beati Bartholomei apostoli, videlicet, quod nos predicti Johannes et Eva dedimus, concessimus et hoc presenti scripto confirmavimus pro nobis et heredibus nostris predictis abbati et conventui duos solidos liberi redditus in incrementum de toto tenemento nostro, de quo prius quinque solidos percipere consueverunt percipiendos, quolibet videlicet anno imposterum septem solidos ad quatuor terminos anni principales pro ratis porcionibus.

Pro qua quidem donacione concessione et presentis scripti confirmacione remiserunt nobis dicti abbas et conventus arreragia viginti solidorum de antiquo reddito proveniencium.

Et quia predictum tenementum per me Evam jure hereditario ad nos pertinebat, apparui personaliter in curia de civitate et me ibidem diligenter examinata, publicè confessa sum, quod ad hoc ex viri mei non tam consensu imperio quam ex mea spontanea et libera voluntate.

In cujus rei testimonium sigilla nostra presentibus sunt appensa, et ad maiorem securitatem sigillum civitatis apponi est procuratum.

Hiis testibus ; Thoma de la Valle tunc maiore Wintonie : Johanne Moraund et Andrea

^a Compare the power given to titheowners by the Tithe Act, 1836, to distrain for rentcharge in arrear upon other lands of the landowner in the same parish.

Silvestre, tunc ballivis Wintonie : Henrico de Durnegate : Adam clerico de civitate :
 Andrea de Candevere, tunc aldermanno de la Hydestrete et aliis.

This agreement is not dated, but appears by an indorsement to have been enrolled in the City Court on Thursday the morrow of St. Bartholomew, 11 Edward I. (1823).

The last is a building lease for two lives at a ground rent, with power of distress and entry :

Hec indentura testatur, quod die Sabati proxima post festum Sancti Valentini Martiris anno regni regis Edwardi tercii post conquestum septimdecimo (1342-3) ita convenit inter religiosos viros fratrem Walterum abbatem monasterii de Hyda juxta Wyntoniam et ejusdem loci conventus ex parte una et Ada le Harre fullone, Wyntoniensi, et Alicia uxore ejus ex parte altera, videlicet, quod prefati abbas et conventus sub forma et condicione subscriptis unanimi assensu et voluntate concesserunt et ad firmam tradiderunt predictis Ade et Alicie quoddam tenementum suum cum omnibus suis pertinenciis in civitate Wynton. quod situm est in parte orientali vici qui Tannerstrete nuncupatur, inter tenementum Henrici atte Park ex parte boreali et orientali et venellam vocatam Petreslane ex parte australi.

Habendum et tenendum predictum tenementum cum omnibus suis pertinenciis predictis Ade et Alicie ad terminum vite eorum et alterius eorundem diucius viventis : videlicet, quod predicti Adam et Alicia unam domum de longitudine viginti pedum et in latitudine decem pedum supra dictum tenementum sumptibus suis propriis facient et edificabunt infra annum datam presencium proximè sequentem, nec licebit Ade nec dicte Alicie nec cuivis eorum, nomine dictum tenementum in parte vel in toto, nec eorum aliquid edificium sumptibus suis constructum vel construendum ibidem prosternere nec exstirpacionem in eadem facere, nec hostium dicti tenementi quominus ingressum pateat ad distringendum obturare.^a

Reddendo inde eciam annuatim magistro operum monasterii qui pro tempore fuerit duodecim solidos sterlingorum nomine annui redditus,^b ad quatuor anni terminos principales, per equales porciones sine ulteriori dilacione.

Et si contingat dictus Adam et Alicia in solucione dicti redditus in parte vel in toto per quatuor septimanas deficere vel cessare (quod absit) vel aliquod edificium sumptibus suis propriis super dictum tenementum, ut prefatum est, prosternere seu abducere, extunc licebit dictis abbati et conventui seu eorum attornato dictum tenementum ingredi, et eosdem Adam et Aliciam de eodem tenemento expellere, ac eciam ipsos per omnia bona sua et catalla mobilia et immobilia, ubicunque fuerint inventa, absque aliquo impedimento vel contradiccione dictorum Ade et Alicie, seu eorum attornato, distringere, et districcione retinere, quousque de redditu aretro existente unà cum dampnis et expensis, si qua eis fuerint, satisfactum.

Et nos predicti abbas etc. (warranty).

^a Not to pull down any building or grub any tree or hedge on the site or fasten the door of the tenement so as to prevent distraint.

^b 12s for 10 feet of frontage works out about 15s. per foot frontage in our money.

XIV.—*The Island of Ictis.* By CLEMENT REID, Esq., F.R.S.

Read 29th June, 1905.

So much has already been published about the ancient trade with Britain for tin, and the accounts given by Diodorus Siculus and Cæsar have so often been discussed, that it would appear as if no further evidence were obtainable. It has seemed also as if there were unfortunate contradictions between the classical authorities, which made their statements untrustworthy, or at any rate too vague and too little exact to be of value.

Perhaps approaching the subject from a different side, I may be able to show that the ancient writers can be literally depended on, and that their descriptions are thoroughly in keeping with each other, and with what we now know to have been the physical condition of Britain at and before the date at which they wrote.

The accounts given by ancient writers of the trade with Britain will be found excellently summarised by Professor W. Ridgeway in his "Greek Trade-Routes to Britain."^a It is unnecessary to go over this ground again, and I need only refer to the supposed discordance between the different writers, and between them and what it was supposed that we knew of the physical geography of Britain 1,900 years and more ago.

The difficulties that have always been felt in reconciling the records were practically these: Mictis, Ictis, and Vectis seem to refer to the same island near Britain; and Mictis and Ictis are distinctly recorded as shipping places for the tin, by Timæus (*flor.* 350-326 B.C.), and by Diodorus Siculus, perhaps following

^a *Folklore*, i. 82 (1890).

Posidonius (about 90 B.C.). Vectis is the name of the Isle of Wight in Roman times. But Pliny, quoting Timæus, says "that the island of Mictis, in which the tin is produced, is distant inwards from Britain six days' voyage, and that the Britons sail to it in vessels made of wicker-work covered with hide." Six days' coasting from the mouth of the Exe would amply suffice to bring boats to the Isle of Wight, for the prevailing summer wind is favourable. The Isle of Wight and more easterly districts of the south of England were politically part of Gaul, perhaps even at that early date; the tin-producing "Britain" was apparently outside the dominion of the Belgæ, and must have been Devon and Cornwall. A coasting trade of this sort would go direct to the Isle of Wight side of the Solent, and therefore there is no mention of the causeway alluded to by Diodorus, writing at a later date.

The account given by Diodorus Siculus is different, and here comes in the principal difficulty which I desire to deal with. I quote from Professor Ridgeway's translation :

The inhabitants of that part of Britain which is called Belerion are very fond of strangers, and, from their intercourse with foreign merchants, are civilised in their manner of life. They prepare the tin, working very carefully the earth in which it is produced. The ground is rocky, but it contains earthy veins, the produce of which is ground down, smelted, and purified. They beat the metal into masses, shaped like astragali, and carry it to a certain island lying off Britain called Ictis. During the ebb of the tide the intervening space is left dry, and they carry over into this island the tin in abundance in their waggons. Now there is a peculiar phenomenon connected with the neighbouring islands, I mean those that lie between Europe and Britain; for at the flood-tide the intervening passage is overflowed, and they seem like islands; but a large space is left dry at the ebb, and then they seem to be like peninsulas. Here, then, the merchants buy the tin from the natives and carry it over to Gaul; and after travelling overland for about thirty days, they finally bring their loads on horses to the mouth of the Rhone.

In this description the talk is of waggons, and apparently of an overland route, but nothing is said about the course taken before the Solent is reached. The author seems also to know nothing of the mining or metallurgy of tin. He speaks of beating the metal into masses (tin can only be cast), which suggests also that the people from whom the information was obtained were the shippers, but not the producers of the tin. The account of the mines is very vague, and might apply either to shallow working on the decayed upper part of the lodes ("gossans") or to stream-works. There is no mention of the method of mining, nor of the washing which is so essential a part of the process in either case. Can it be that the inhabitants of Belerion neither desired nor chose to give

information as to the country beyond, from which they obtained the tin? It is curious that in this account there should be no hint as to the route taken to Ictis, except the causeway, which everybody must have known, including the foreign merchants.

The generalisation about other islands can be disregarded. The author, I believe, was quite right as to the only one on the trade route he was describing, but there is nothing to show that he was acquainted with any others, though certain of the Scilly Islands also would answer to his description, as far as being alternately islands and peninsulas. At the date he wrote St. Michael's Mount must have been an isolated rock rising out of a swampy wood.

An incidental remark by Cæsar seems at first sight to add to the confusion, for he speaks of tin coming from the interior, which would scarcely be his description if he were referring to a coasting trade with Devon and Cornwall. He is right, I think, for he refers to the British part of the trade-route, perhaps implied but not described by Diodorus Siculus, who mentions only the causeway to Ictis and the route through Gaul. The British part also was an overland route, only reaching the coast at the Solent. Cæsar was not speaking of the position of the mines, but of the metallic tin as brought to the port for shipping, and this tin came from inland. There is no evidence that the tin mines up to Cæsar's time were in the hands of strangers, though the export trade apparently was so, and had been for a considerable period.

In the foregoing comments on the ancient descriptions it is assumed that Mictis and Ictis were the same island as Vectis, for only thus can the perfect consistency of the accounts be brought out. It now remains to deal with the evidence yielded by geology and physical geography, which together show that at the date we are dealing with there was no other spot which could answer to the description, and that then, though not now, the Isle of Wight fully answered to the peculiar sketch given by Diodorus Siculus.

It fell to my lot some years ago to revise the geological map of the northern part of the Isle of Wight for the Geological Survey, and later on I had to map the whole of the adjacent parts of the mainland. Though greatly interested in the changes which this coast has undergone, and is still undergoing, I did not immediately see the bearing of my work on the descriptions given by Cæsar and by Diodorus Siculus of the tin trade in Britain and of the peninsula Ictis. But all the while I had in my hands the evidence that seemed to make it clear that when these authors wrote Vectis must have corresponded to the description given of Ictis.

If the geological map is studied it will be seen that the strata in the part of the Isle of Wight immediately east of Yarmouth form a basin or syncline, at the bottom of which lies the Bembridge Limestone, a rock which can form extensive pavement-like ledges on the foreshore. This basin, however, is now incomplete, the Solent having cut away its western lip, leaving a ragged ledge of limestone at Hampstead and another outcrop near Yarmouth. It may be objected that there is no visible ledge of rock on the foreshore at Yarmouth, and this is the case at present. The limestone has, however, an extensive outcrop near Thorley Street; but it happens to strike the coast just where the River Yar has cut a deep channel to below sea-level, thus destroying the visible continuity of the ledge. But if we follow the line of strike across the Yar the limestone reappears in Black Rock, a rock now only visible at low tide. Black Rock, however, is, I believe, the last remnant of the old causeway, in use at the time when Diodorus wrote.

It is obvious that the limestones of Black Rock and Hampstead Ledge are the same, and that the visible outcrops must once have swept round northward and southward near Yarmouth to close in the basin, for neither the limestone nor the overlying clays continue as far as the present coast-line of the mainland. On completing the geological map, as it would appear if the limestone still rose to the sea-level, we find, however, that the loop of rocky ledges must have reached the mainland coast of 2,000 years ago, though now it does not do so.

The way this conclusion was arrived at is as follows: From the known inclination of the strata the broken lip of the basin was completed and the approximate position of the limestone at the sea-level was laid down on the geological map. This brought the loop of rock half-way across the Solent. Next, the rapidly-wasting coast-line was restored to its calculated position of 1,900 years ago, and it was found possible to reconstruct it with a fair approximation to the truth; at any rate the probable error is not of such a magnitude as seriously to affect our argument. The known rate of loss just outside the Solent on the mainland is approximately three feet per annum, which would give a strip something over a mile in breadth destroyed in 1,900 years. Accepting the loss for the last few centuries as giving a fair average, I have reconstructed the coast-line outside the Solent, for a date about the beginning of our era (see map, fig. 1).

The next step is more difficult. It is obvious that at the present day a shingle-spit, at the end of which lies Hurst Castle, greatly protects the shores of the Solent from the heavy swell driven in by the west wind, and that, though the less protected Isle of Wight shore is wasting rapidly, little or no change is now



Fig. 1. THE CAUSEWAY TO ICTIS, ABOUT 100 B.C.

[The land outside the broken lines has now been swept away by the sea ; the stippled area represents the hard Bembridge Limestone.]

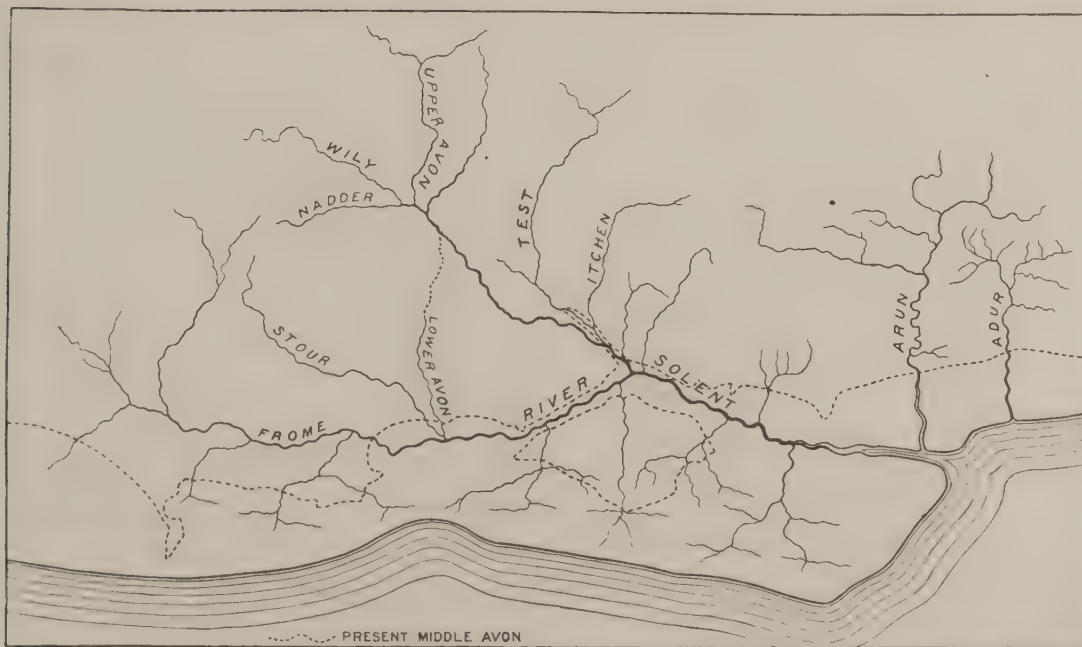


Fig. 2. BASIN OF THE SOLENT IN LATE PLIOCENE TIMES.

[The broken lines represent the existing coast.]

taking place on the mainland opposite; in fact under the lee of Hurst Castle mud flats are growing. The spit of shingle on which Hurst Castle stands has not, however, been long there. Like the similar accumulation of beach at Dungeness, it is of rapid and comparatively modern growth, having only begun to form after the subsidences of the land which carried the "submerged forests" beneath the sea-level. The last of these subsidences, since which the relative level of sea and land in the south of England appears to have remained unchanged, happened in late Neolithic times. I get a date for it of about 1500 B.C., or a few centuries earlier, from rough calculations as to loss of land, or rate of accumulation of mud-flats and sand-dunes, in different parts of England. Before this beach of Hurst Castle had extended seaward, the rate of loss on the mainland just inside the Solent must have been nearly as rapid as that outside; after the beach grew, the loss ceased.

As long, however, as part of that ledge of limestone remained intact, its effect must have been to turn the strong tidal currents northward and make them impinge against the coast of the mainland, thus causing rapid waste. At the same time the tidal scour would prevent the accumulation of the Hurst Castle bar, which would not begin to accumulate till the ledges were cut away and the channel had shifted southward.

Notwithstanding all these apparent complications, which seem to render so uncertain the date of the isolation of the Isle of Wight, the dominant factor is a very simple one. The rate of destruction of the isthmus depends on the general rate of loss of the coast-line to the west, and this is a known quantity. The coast-line for the beginning of our era has been restored, and except for a rocky causeway there was then no connection between the Isle of Wight and the mainland. Let us add another strip of land, representing the loss for six more centuries, and instead of a mere rocky causeway we find a wide low isthmus, representing an old water-parting in the ancient Valley of the Solent, as I will now attempt to show.

The view above expressed is very different from that of other writers who have suggested that when Diodorus wrote the Isle of Wight was still joined to the mainland. They postulate a ford between Stone and Gurnard Bay. But this, for geological reasons, is, I think, quite impossible. Even if the water were sufficiently shoal, I am sure that nowhere except near Yarmouth would it be possible to take carts across. The bottom, from Hurst Castle to Spithead, except at the one causeway, would everywhere be soft clay or loose sand.

The objection will probably be made that long before the Roman period the Isle of Wight must have become an island, for between it and the mainland must

have run the deep channel of the Solent, which is often, though I think wrongly, considered to be the outlet through which the old rivers draining into Southampton Water once discharged. This idea involves an entire misapprehension of the course of the ancient River Solent, once one of the largest rivers of Britain. As it involves also the possibility of any such continuous rocky naturally paved causeway as I describe, it will be necessary to go back to a still earlier period, and trace step by step what is known of the history of this old river.

In the course of the Geological Survey of the Hampshire Basin, a fairly complete history of this river has been worked out; but as far back as 1862 it was pointed out by the Rev. W. Fox^a that the Solent was nothing but a continuation of the ancient valley of the Frome, which had been breached laterally by the sea between the Needles and the Isle of Purbeck. The same view was taken by Sir John Evans in 1874,^b and by Mr. Strahan and myself in 1889, after the completion of the new geological map of the Isle.^c

In later *Memoirs of the Geological Survey*, and in the geological article in the *Victoria County History of Hampshire*, I have given further details of this old river system, and fixed more exactly the date of the changes; but the only one of these Memoirs that need here be referred to is that containing a restoration of the whole river system, here copied.^d This map (fig. 2) may be taken as our starting-point, as it shows the physical geography of this part of England about the date when man perhaps first appeared in Britain.

When the sea breached the wall of Chalk Downs which once stretched continuously from the Needles to the Purbeck Hills, it cut off the whole of the head-waters of the Solent, diverting them directly into the sea. The rest of the river continued to flow eastward, down the slope of the valley; but some of the tributaries nearest to the new gap would tend to take the shortest course to the sea, so that there would be two streams in the valley of the Solent, flowing in opposite directions from a low watershed or divide. Where would this divide be? At first sight it looks as if there would be a steady movement of the divide eastward as the gap widened; but, taking into account the nature of the rocks and their dips, I think that this would not be the case. The position of the divide

^a *Geologist*, v. 452.

^b Presidential Address, *Proceedings of the Geological Society*, vol. xxxi. p. lxxi. See also *Ancient Stone Implements of Great Britain*, 2nd edition, 1897.

^c *Geology of the Isle of Wight*, 2nd edition, chap. xv.

^d *Geology of Ringwood*, 1901, chap. viii.

would soon be fixed, and it would remain practically unaltered till it was finally broken through by the sea on either side.

In reconstructing the old valley, we must remember that when the breach was made into its side the river flowed at a higher level than the present Solent. We therefore need not expect to find a deep and very ancient channel in the valley to the east. The deepening of the present Solent seems to have taken place at a much later period, probably in the main when the land stood 50 feet higher than now and the lowest of the "submerged forests" (probably also Neolithic) was growing. The position of the divide being already fixed at that period, subaerial denudation would not much affect it, though it might, probably would, greatly deepen the valley on either side.

This brings us back to the question: What fixed the position of the divide? There is only one continuous rock-bed amid the strata which crop out along this valley between the Avon and the Solent, and this bed is the Bembridge Limestone. Though not a very hard rock, it is much harder than anything above and below. A short distance south-east of Yarmouth it forms an actual escarpment and bold feature for two or three miles. It was, I believe, the continuation of this escarpment across the valley that probably fixed the limit of the gradual "capture" of successive portions of the main valley by streams flowing westward instead of eastward. They cut back to this scarp, but no further, the dip slope of the limestone fixed the direction of the flow of the water.

The escarpment of the limestone must once have been further west than now; but only a short distance during the periods we are dealing with. The dips show that the basin must end fairly abruptly, and the limestone scarp must always have been east of the Avon Water, which has its outlet close to Hurst Castle. Thus for a long period the water-parting across the Solent Valley was formed by the escarpment of the Bembridge Limestone, and it lay between the Avon Water and the Lymington River.

It has already been pointed out that the River Yar cuts a deep and wide channel through the limestone at Yarmouth. As its waters turned eastward on entering the main valley, it must also have breached the north-eastern lip of the basin in that direction, so that no continuous causeway would have connected Hampstead Ledge with the mainland. This brings us back to the point that at one spot only is it possible for a continuous land-connection to be found; on each side of it the main valley would be either occupied by sea or by streams of sufficient magnitude to be troublesome.

We thus see that from the western side of the Yar a natural stone causeway

extended to the mainland opposite Pennington Marshes (fig. 1),^a but that this causeway at the time Diodorus wrote was already being lowered by the sea to such an extent that it was only available at low tide. As soon as the sea once got round the northern edge of the rocky ledge, the tidal scour would be so great as rapidly to undermine it, and to widen and deepen the gap, rendering the causeway useless. When this took place the crossing would naturally be moved to a ferry further east, and out of reach of the heavy swell let in through the new gap. For various reasons the neighbourhood of Stone Point seems to be the most probable locality for this later crossing.

The landing-place on the mainland from the causeway must have lain between the Avon Water and the Lym. Almost certainly it would have been near Woodside Farm, for there only does the firm gravel come right down to the water's edge. From this point the road for wheeled vehicles, or probably for pack-horses, is obvious; it must run across the firm open ground and avoid the oak forests and marshes. It must strike inland past Pennington, Durns Town, Burley, and cross the Avon at Ringwood. From this point there seem to be two routes across the downs, both meeting at Blandford. Beyond Blandford the road probably passes under Hod Hill, where it crosses the Stour, and so on probably by Cerne Abbas, Maiden Newton, Crewkerne, Chard, and the Black Down Hills to Dartmoor and Cornwall. This route I suggest as the "line of least resistance," which a trade route must be. Between the Isle of Wight and Maiden Newton it seems the obvious road; west of the latter place the country becomes more difficult, and I do not yet know it well enough to trace the road.

The question will perhaps be asked, Why did the merchants take the trouble to carry the tin across to the Isle of Wight, when according to your own map there were abundant harbours on the mainland? These harbours, however, are all more or less exposed to the prevalent south-west wind, and are sheltered by no high land. Besides this, the harbours outside the Solent were probably always rendered dangerous by bars of sand and shingle. On the south side of the Solent, on the other hand, there existed an ideal series of landlocked sheltered harbours, extending from Yarmouth to Brading, and in most of these harbours rocky ledges must have formed natural staithes or "hards" very convenient for shipping. The mainland harbours would show at low tide mud-flats or sand-banks, not so convenient for wheeled vehicles.

^a The coast line is that calculated for about the year 100 B.C. The present coast is marked by broken lines; but on the north side of the Solent wide mud-flats are found, and the high-water and low-water lines are now far apart. The coast was cut back and the limestone removed, but afterwards this loss of land was partly made good by the accumulation of mud.

XV.—*Excavations at Caerwent, Monmouthshire, on the Site of the Romano-British City of Venta Silurum, in the year 1904. By T. ASHBY, Jun., Esq., D.Litt., F.S.A.*

Read 18th May, 1905.

THE excavations of 1904, with which the present report deals, were in some respects the most difficult which the Committee has had to conduct at Caerwent. In the first place, the large house which appeared rather unexpectedly on the west side of the road leading to the newly discovered south gate had been reconstructed several times in its different parts, the periods not being always clearly distinguishable, and in the second place, owing to the considerable depth at which a great part of the house lay, the excavations were so protracted that both time and money began to fail, the latter owing to a most disappointing falling off in the number of our subscribers, so that, had it not been for the timely help of two Fellows of the Society, Lord Tredegar and Lord Llangattock, it would have been necessary to begin the filling in before many important problems had been solved; and even as it is, we are not able to say that the exploration has been, in certain points of detail, as complete as we could have wished.

The work of the past season was confined to the south-east portion of the field in the south-west corner of the town, which has now been thoroughly excavated.^a The area should, if the arrangement of streets which we have elsewhere observed were maintained, have been bounded on the west by the road

^a For the previous reports see *Archaeologia*, lvii. 295; lviii. 122, 391.

from the north gate,^a but no traces of it were found to the south of the churchyard. On the north it is bounded by the wall of the churchyard, 38 feet north of which the line of the street running east and west parallel to the main road was found. It was 20 feet in width and paved with cobbles.

On the east comes the road descending to the south gate, of which more will be said later. It does not coincide, as had been previously supposed, with the road in present use as the exit from Caerwent on the south, which is, and always was, as far as we know, a farm track, but runs slightly to the west of it.

We may begin our description at the north end of the plot excavated with the building that we have called House No. X. (See Plate LXVI.)

HOUSE NO. X.

The street which we should have expected to find to the west of this house ought to have passed immediately to the east of the end of the wall projecting eastwards from the courtyard of House No. IX.^b To the east again is another open space measuring 106 feet from west to east and 75 feet from north to south, and partly paved with concrete. A small pit was found in the middle of it which contained many roof tiles, and at 4 feet 6 inches below grass level a curious carved object of Kimmeridge shale (fig. 1), the use of which is quite uncertain.

The north-east angle of this space is curiously formed, the wall having several footings, and the angle itself being rounded on the outside.

The space seems to have no west wall, while on the south it is bounded by the north wall of House No. XI.

To the east of this space comes a range of rooms which we have called House No. X,^c treating them as a portion of a corridor house, the remaining portion of which lies beneath the churchyard, and of which the north wall has been found, as is indicated on the general plan of the city.

Assuming that we are right in separating them from House No. XI., the

^a See *Archaeologia*, lix. pl. ix. and p. 113, fig. 11.

^b *Archaeologia*, lviii. pl. xxvi.

^c The dimensions of the spaces numbered on the plan are as follows: (1) $6\frac{1}{4}$ feet wide; (2) $6\frac{1}{2}$ feet by $14\frac{1}{4}$ feet; (3) $17\frac{1}{2}$ feet wide; (4) $17\frac{1}{2}$ feet by $14\frac{1}{2}$ feet; (5) $17\frac{1}{2}$ feet by $7\frac{1}{4}$ feet; (6) $17\frac{3}{4}$ feet by $15\frac{1}{2}$ feet; (7) $9\frac{1}{4}$ feet wide; (8) 4 feet wide; (9) $4\frac{3}{4}$ feet by $25\frac{1}{2}$ feet.





house appears to consist of a range of rooms with a corridor on the west and a long room (7) on the east, outside which is another corridor (8); at the south end of this three rectangular slabs lie against the east wall. Their purpose was not satisfactorily ascertained, as the cartway through the field was not disturbed. No discoveries of any particular interest were made in any of the rooms, with the



Fig. 1. Object of Kimmeridge Shale.

exception of two flat-bottomed black dishes found in Room 4, one of which was covered with a stone.

To the south of this row of rooms are two spaces, the object of which is uncertain, by which the building is rather loosely connected with House No. XI.

HOUSE NO. XI.

On the north side of the house is a narrow and much subdivided space (1), which probably had merely a constructional use. To the south of it is a range of rooms of fair size, which had no floors that could be determined, and presented no objects of interest as regards what could be made out of their original condition.*

* The dimensions of the spaces numbered on the plan are as follows: (1) 76 feet by $3\frac{1}{2}$ feet; (2) $19\frac{1}{4}$ feet by $17\frac{1}{2}$ feet; (3) $24\frac{1}{2}$ feet by $6\frac{3}{4}$ feet; (4) 17 feet by $16\frac{3}{4}$ feet; (5) 7 feet by $15\frac{1}{2}$ feet; (6) $14\frac{1}{4}$ feet by $15\frac{1}{2}$ feet; (7) $14\frac{1}{2}$ feet by $10\frac{1}{2}$ feet; (8) $23\frac{1}{4}$ feet by $6\frac{3}{4}$ feet; (9) $6\frac{1}{4}$ feet wide; (10) 14 feet by $9\frac{1}{2}$ feet; (11) $23\frac{1}{4}$ feet by $9\frac{1}{2}$ feet.

But many later additions have been made. In the north-west angle of Room 3 we found two small troughs formed of slabs of old red sandstone, fragments of roof tiles, each of which contained the bones of an infant under thirty months

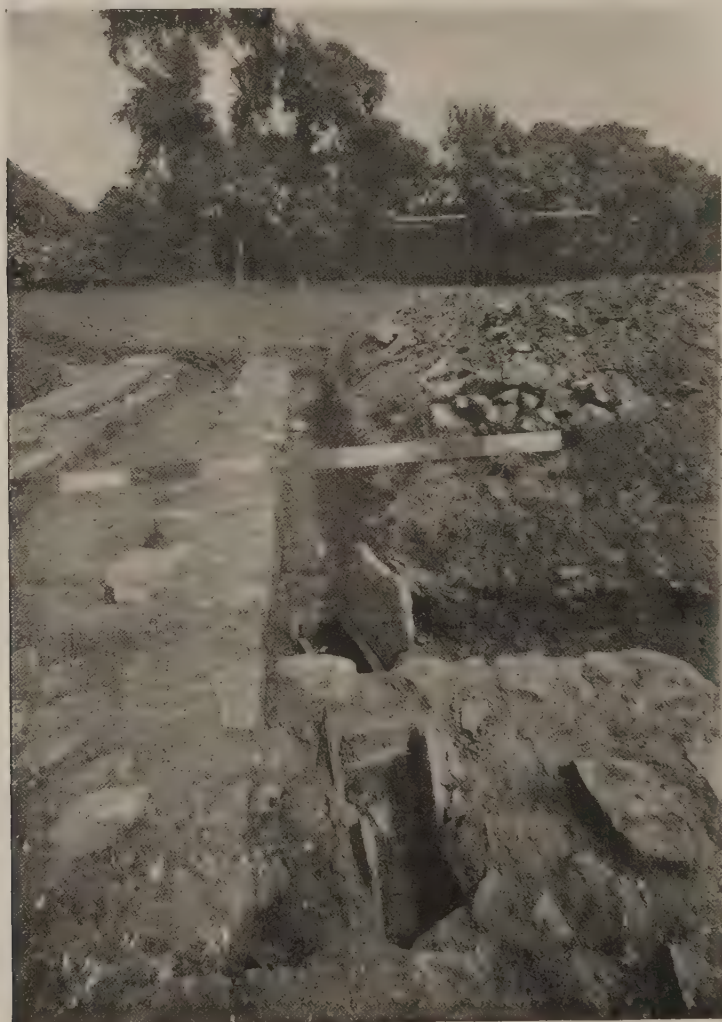


Fig. 2. Graves of two infants, House No. XI. Room 3.

old (fig. 2). These graves measured respectively 2 feet by 8 inches and 1 foot 8½ inches by 7 inches. The smaller of the two has been reconstructed in the local museum. The next room to the east (4) contains a curious rectangular enclosure,

with pitching to the north of it. The next (5) has remains of pitching in its southern portion. This was cut off in later times by a wall of large blocks, mostly of sandstone, all of which are fragments from other buildings. Of these



Fig. 3. Base of a statue of Mars, from House No. XI. Room 5.

the most interesting proved to be the base of a small statue dedicated to Mars (fig. 3).^a It bears the following inscription :

deo MARTI·LENO
 sIVE OCEL·VELLAVN· I·NMA/G
 M·NONIVS·ROMANVS·OB
 IMMVNITAT·COLLIGN
 D D S D
 GLABRIONE·ET·H·MVLO·C·S·X·KSEPT

[Deo] Marti Leno [si]ve Ocelo Vellaun(o?) et num(ini) Aug(usti) M(arcus) Nonius Romanus ob immunitat(em) collign(i) d(onum) d(e) s(uo) d(edit) Glabrione et Homulo co(n) s(ulibus) (ante diem) x k(alendas) Sept(embres) [23 August, A.D. 152.]^b

^a The section of the panel moulding of this is shown on Plate LXVII. 1.

^b For Homulo, cf. Hübner, *Corpus Inscriptionum Latinarum*, xiv. 250.

Lenus is a not uncommon name of Mars in Rhenish inscriptions,^a while Ocelus has been only found once, on an inscription from Carlisle.^b It is possible that the dedicator came from the Rhine, and that Ocelus is the British equivalent for Lenus. Vellaun(o) is a new epithet, but the meaning cannot be doubtful, the root being that of *duellum*, two or zwei, and recurring in the name of the Catuvellauni. The words *ob immunitatem collign.* give us more difficulty. The *immunitas* referred to is probably admission without payment of the monthly contribution or of the entrance fee usually exacted from members of a *collegium*; while *collign(ium)* must, probably, be recognised as a by-form of *collegium*:^c cf. *C. I. L.* vii. 1069, 1070, where the interpretation *col(umnam) lign(eam)* is difficult to accept, and is indeed rejected by Hirschfeld in commenting on *C. I. L.* xii. 22, where *collign(ium)* again occurs. If not we must interpret *col(legi) lign(ariorum)*, though there is no trace of a stop between the two l's. The reference would then be to a guild of timber merchants. An interesting point is this, that beside the feet of Mars are those of a water bird. This may be either a goose or a swan.^d

Another of these stones, measuring 1 foot 10 inches in width and 3 feet in depth, appears to have been the top or bottom of a large inscribed pedestal like that found on the village green,^e and has on it some marks which may possibly be faint traces of letters; while a third is a portion of a pillar, 1 foot 3 inches

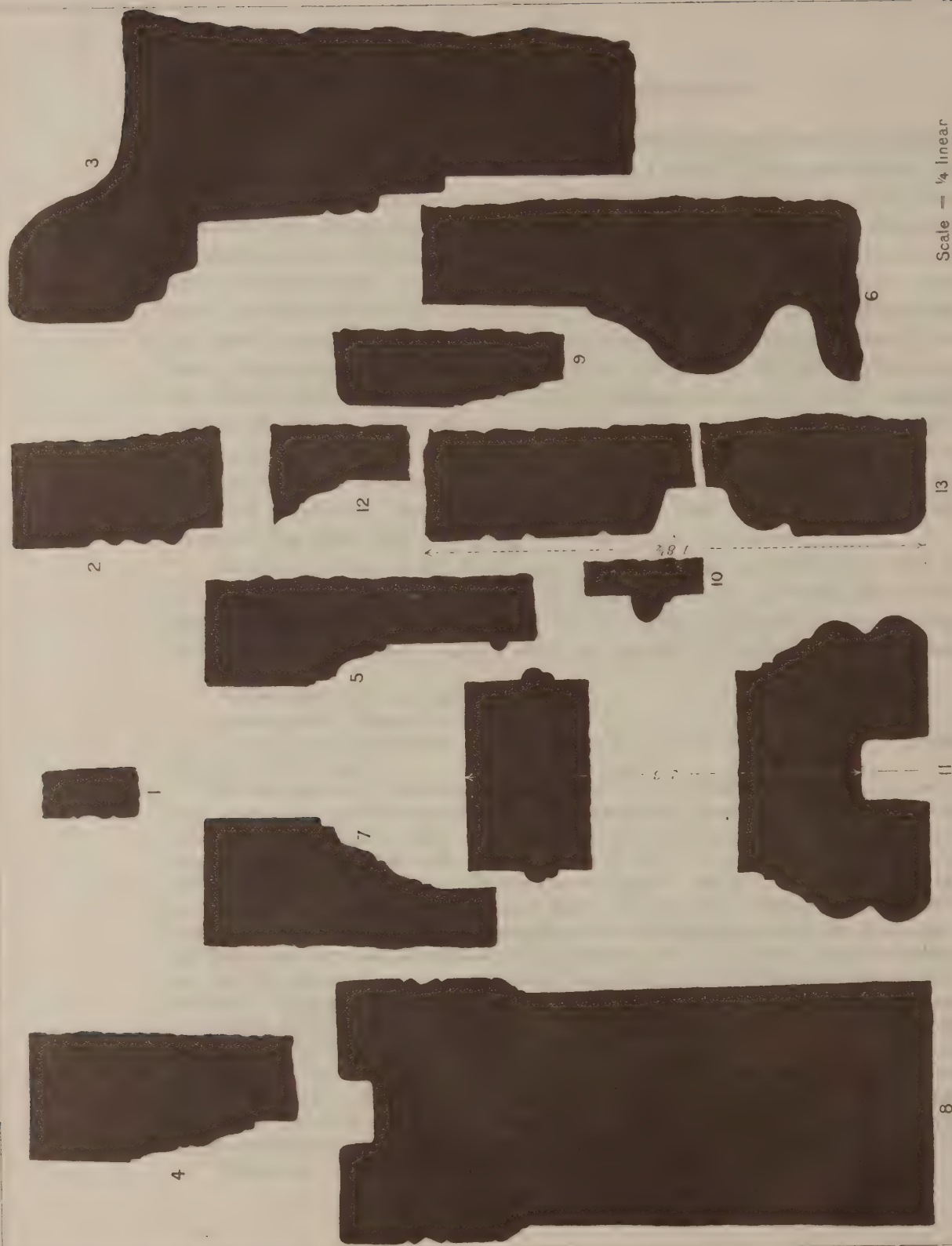
^a Holder, *Alt-Celtischer Sprachschatz*.

^b Holder, *op. cit.*; *Classical Review*, 1894, 228.

^c It is not at all certain whether the letter is an *e* or an *i*, but *collegnium* would be a by-form even closer to the original.

^d For the goose see F. Möller in *Westdeutsche Zeitschrift*, V. (1886), 321-331, who cites several cases, among them the Thingsus relief from Housesteads and a large slab from Risingham. He inclines to connect the goose with Mars because of its wakefulness, and thinks that for this reason it figured among the sacrifices to him (Martial, *Epigr.* ix. 31). It is curious that he omits in this connection the well-known story of the geese on the Capitol. He does not, however, deny the occurrence of the swan also on monuments of Mars. For the latter see *Götting. Gel. Anzeig.* 1874, p. 1405. "Kyknos findet sich in der Sage ebensowohl als ein Sohn des Ares wie als einer des Apollon. Auf Bildwerken trifft man den Schwan auch als Attribut des Ares, Lersch in *Bonner Jahrbücher*, viii. 152, 'Der Schwan kam auf dem Schweizer Thongefäss (v. und vi. 302, a round vase engraved by Merian, *Topographie der Schweiz*), dasselbe kommt nach genauerer Ansicht auch auf meinem Erztäfelchen des sogenannten Mars Victor (Heft iii. taf. iv. 2) vor. Der Schwan steht also als ein dem Mars heiliges Thier von jetzt fest, sei es, dass er ihm ursprünglich eigenthümlich war, oder durch Vermittelung der Aphrodite zukam. Denn verwandte Gottheiten tauschen nach einer von Gerhard (*Trinkschalen*, S. 10) schon angeregten Bemerkung häufig ihre Symbole. Vielleicht ist selbst Kyknos, der Sohn des Ares, nicht ohne Beziehung auf dieses Attribut.'" There is, however, no reference that I have been able to discover to any such representation in the round.

^e *Archaeologia*, lix. pl. xii.



in diameter, the shaft of which is preserved to a height of 2 feet, while the rectangular base, 1 foot 7 inches high, was apparently intended to be buried in the ground.

To the east of the wall containing these stones is a base of masonry about 3 feet square, the object of which is uncertain. This eastern portion of what was originally one room we have called Room 6.

To the south is another row of rooms. The westernmost (7) had a floor of old red sandstone *tesserae*, only a few of which were preserved, and a well-defined doorway opening to the south. Just outside of it a little to the east a hoard of some 250 *minimi* was found at 2 feet below grass level, but no trace of any vessel in which they could have been hidden was found with them. Just beyond was a well in which a large sandstone capital was found at 2 feet down, with the top hollowed out (Plate LXVII. 3), also the fragments of a stone trough and part of another capital (Plate LXVII. 4). The well was not explored beyond a depth of about 15 feet, owing to lack of time. Its stone lining was preserved on the north only.

Room 8 contained a mosaic pavement with squares, alternately of guilloche and key pattern, in red, blue black, and white, and a border of old red sandstone *tesserae*. The next room (9) had a floor paved with old red sandstone slabs, 3 feet in width, with narrower stones on each side, and trenches between these and the side walls 1 foot 10 inches and 1 foot 6 inches respectively in width. This may possibly have been a latrine, though there was no trace of drainage. Here was found a small capital with necking, the bottom of which was hollowed out.

Room 10 was not remarkable, while Room 11 had a pavement of rough sandstone slabs, among which was one block with a dowel hole in it. From the north-east angle of this room a wall runs for 60 feet south with two cross walls, which, as they seem to be broken off abruptly, may be merely the wing walls of an entrance to the open space between House No. XI. and House No. XII.; and farther south were perhaps the remains of another (too uncertain, however, to be shown on the plan), forming the north side of a space which has a large sandstone slab in its south-east angle. Previous to the construction of the east portion of the two houses the site seems to have been traversed by two V-shaped drains cut in the clay. One of these takes its beginning from a culvert with stone sides, roofed with large slabs, which issues from under the churchyard wall to the east of House No. X. In this portion much pottery was found, and the half of a turned bone handle. After 14 feet the stonework stops and the drain seems to become an open one; its line then passes under the east wall of Room 9 of House No. X.,

and that of Room 6 of House No. XI., which is completely built in it. It passes through Room 11 of House No. XI., then to the west of the long wall, and finally ends abruptly just north of Room 17 of House No. XII. In its south portion



Fig. 4. Western earth drain (north of House No. XII.).

rough stones, perhaps the foundations of a wall, were found, the drain having been partially filled. The total fall is 8 feet 4 inches in 147 feet. A coin of Valens was found in it between Houses Nos. XI. and XII.

In Room 11 of House No. XI. a branch of the drain goes off west (fig. 4), turns south almost at once, and runs as far as the north wall of Room 21 of House No. XII., where it, too, abruptly stops. These drains must both have run off into the ground; but this ending is rather remarkable. It is possible that the portion in Room 11 of House No. XI. remained open and served as a latrine, though this is somewhat unlikely, as the south wall is not properly carried over either drain, and seems to have been built into their bed.

To the east of Houses Nos. X. and XI. is a long narrow space, a kind of yard apparently, enclosed on the north and east by a rough wall, with a break for an entrance on the east. Against the east wall was a pit 5 feet 3 inches in depth, which produced some pottery, including one small cup of "Samian" ware, almost perfect, with the stamp ATTILLI. M. To the south-west of the pit in one trench were possible traces of an earth drain, which were not followed further.

To the east again is a large gravelled space shading off imperceptibly into the paved road leading to the south gate. The surface is quite close to the ground level, and the gravelling seems to rest directly on the hard clay, which is here only a few inches below the modern ground level. In this space a few isolated blocks of stone, shown on the plan, were found.

HOUSE NO. XII.

This house^a is almost the largest that has been discovered at Caerwent, but unlike most of the other large houses it approximates fairly closely to

^a The dimensions of the rooms are as follows: (1) $4\frac{1}{2}$ feet by 7 feet; (2) (yard) $105\frac{3}{4}$ feet by $23\frac{1}{4}$ feet at the north end, 21 feet just to the west of Room 1; (3) 17 feet by $25\frac{1}{4}$ feet; (4) $16\frac{1}{2}$ feet by $15\frac{1}{4}$ feet; (5) $16\frac{1}{2}$ feet by $18\frac{1}{4}$ feet; (6) $16\frac{1}{4}$ feet by $7\frac{3}{4}$ feet; (7) $22\frac{1}{2}$ feet by $8\frac{3}{4}$ feet; (8) $25\frac{1}{4}$ feet by $9\frac{1}{2}$ feet; (9) 11 feet by 8 feet; (10) $9\frac{1}{2}$ feet by $7\frac{3}{4}$ feet; (11) $19\frac{3}{4}$ feet by $19\frac{1}{4}$ feet; (12) $18\frac{1}{4}$ feet by $19\frac{1}{4}$ feet; (13) $7\frac{1}{4}$ feet by $19\frac{1}{4}$ feet; (14) 9 feet by $19\frac{1}{4}$ feet; (15) $14\frac{1}{2}$ feet by $19\frac{1}{4}$ feet; (16) $48\frac{1}{2}$ feet by $7\frac{1}{2}$ feet; (17) 17 feet by $19\frac{1}{4}$ feet; (18) $13\frac{3}{4}$ feet by $12\frac{1}{2}$ feet; (19) $16\frac{3}{4}$ feet long; (20) 10 feet by $14\frac{3}{4}$ feet; (21) 21 feet by $19\frac{1}{4}$ feet; (22) $22\frac{3}{4}$ feet by $7\frac{1}{4}$ feet; (23) 18 feet by 4 feet; (24) 18 feet by 6 feet; (25) $13\frac{3}{4}$ feet by $19\frac{1}{4}$ feet; (26) $29\frac{3}{4}$ feet by $7\frac{1}{4}$ feet; (27) 14 feet by $17\frac{1}{4}$ feet; (28) $13\frac{3}{4}$ feet by 19 feet; (29) $7\frac{1}{4}$ feet by 19 feet; (30) $7\frac{1}{4}$ feet square; (31) $13\frac{3}{4}$ feet by $12\frac{1}{2}$ feet (east wall), $11\frac{1}{2}$ feet (west wall); (32) $6\frac{3}{4}$ feet by 11 feet; (33) $22\frac{1}{2}$ feet by $11\frac{1}{2}$ feet (east wall), 13 feet (west wall); (34) $8\frac{1}{2}$ feet by $11\frac{1}{4}$ feet; (35) $35\frac{1}{2}$ feet by $22\frac{3}{4}$ feet; (36) $23\frac{1}{2}$ feet (to end of apse) by $18\frac{3}{4}$ feet; (37) $19\frac{1}{2}$ feet by $8\frac{1}{2}$ feet (east wall), 7 feet (west wall); (38) $19\frac{1}{2}$ feet by $12\frac{1}{4}$ feet (east wall), $11\frac{1}{2}$ feet (west wall); (39) $19\frac{3}{4}$ feet by 13 feet (east wall), 15 feet (west wall); (40) $19\frac{1}{2}$ feet by $18\frac{3}{4}$

the normal type in Britain, being a courtyard house with no rooms on the south side, a fact easily accounted for by the proximity of the city wall. It was not all, however, constructed in one period, for the north wall of the house is plastered on the outside as far east as the north-east angle of Room 21, whereas further east this wall is not so protected, but is set 4 inches further north. The east wall of Room 21, too, falls into line with a suppressed wall which runs through Rooms 22, 23, 24, and only comes into being again as the west wall of Room 20. Here it has two coats of plaster, one pinkish, the other white; the latter is found on the south and east walls, whereas the former occurs on the west wall only, and on that portion of it where the end of the south wall comes against it. Here, too, the angle of the original wall forms a slight curve, which the plaster follows, as if this had been the south-east angle of the earlier building, and hence a wall goes off west, though it is broken away after about 6 feet, and could not be traced further.^a If this was the case the original house was much smaller, and included no rooms east of 21. We may suppose that it consisted of the northern range of rooms, of a corridor on the west and south, perhaps double on the west, of Rooms 22 to 24, 26, and perhaps 31 to 34 (33 and 34 being slightly smaller). The latrine (27) is probably to be treated as forming no part of the original house, though neither it nor Rooms 31 to 34 can belong to the latest period of all. At a later period the east portion was added, forming a new and larger courtyard, the old one being encroached on by the erection of 35 and 41; at the same time the west wall was reconstructed, 42 and 43 added, a new south wall given to 26, narrowing it a trifle, and 23 and 24 more or less suppressed. At a third period, or perhaps not even at one period, other alterations occurred in the west part of the house, the original corridor being suppressed and Rooms 38 to 41 created, and the corridor pushed on at the expense of the northern portion of the earlier western corridors. Finally Room 43 was enlarged slightly to the south. The rooms to the east of 21, which, as we have said, probably do not belong to the original building, show traces of reconstruction also. The wall which runs at a curious slant across the north end of Room 14 may be connected

feet; (41) $19\frac{1}{2}$ feet by $15\frac{1}{4}$ feet; (42) $13\frac{1}{4}$ feet by $14\frac{3}{4}$ feet; (43) 9 feet (north wall), $11\frac{3}{4}$ feet (south wall), by 30 feet.

The courtyard measures $92\frac{1}{2}$ feet (extreme length along south wall) by 54 feet.

The frequent recurrence of the dimension $19\frac{1}{4}$ to $19\frac{3}{4}$ feet should be noticed. It is an approximation to 20 Roman feet (= $19\frac{1}{2}$ English feet).

^a This wall is 3 feet wide below footings, as is the west wall of Room 20, the south and east walls being a foot narrower.

with the structure of the room, as no traces of it can be detected further east or west. But the corridor (16) once included Room 10, and its south wall was prolonged up to the east wall of the house, forming two rooms (5, 6), where later there was but one. A small apse at the east end of Room 6 was probably a bath, from its shape and size, though there was no trace of the lower floor nor of the west wall of the bath itself, and the end portion of the west wall of Rooms 10, 9, 8 has been reconstructed, the south portion of the earlier wall apparently remaining in use to the south of a doorway from 8 into the courtyard, a very curious arrangement, which must have made the doorway a somewhat make-shift affair. Careful search has not revealed the slightest trace of any wall corresponding to this later wall on the south side of the opening.

The main entrance of the house was from the east, that is, from the road leading to the south gate of the city. A doorway 8 feet 4 inches wide with wing-walls, against which the double gates went when open, leads into the long narrow yard (2), which is roughly pitched and slopes down with the high road.^a It is clearly a later addition to the house, as may be seen at the points where it joins up with the older work. Its east side comes sharply inwards to the south of the entrance so as to give more width to the street near the city gate, and its south-east angle is sloped off for the same reason. But at some later period a small room, numbered 1 on the plan, has been added a little north of the south-east angle. This may have been a porter's lodge, though it is rather far from the door. It encroaches on the roadway, which forms its floor, and is entered by a doorway 3 feet 3 inches wide. From the yard, doorways open into Rooms 3, 4, and 6. Rooms 7 to 10 can hardly have served as an east corridor, because they are too much subdivided and do not communicate with all the rooms to the east of them. There is no doorway between 3 and 4; but the latter originally had a doorway from the yard (2), with a threshold of three blocks of sandstone giving a width of 8 feet 8 inches; this was blocked up in later times, and 4 was then accessible only from 5. The rooms at the north-east corner (11 and 12) are above the level of Room 16, and were perhaps only entered from the open space on the north,^b while the rooms on the east side of the courtyard have no direct connection with 16, the wall between it and 10 rising well above the level of the

^a Near the south-east angle of this yard a fragment of the shaft of a column, with necking $6\frac{1}{2}$ inches in diameter, was found.

^b With Room 12 this certainly seems to have been the case.

floors of both. 17 is rather lower, being only 6 inches above 18 (which is on the same level as 16), and communicates with 15 and 21. Rooms 13 and 14 have lost their floors, and little can be said about their original level.

We may now proceed to describe the various rooms in detail, from the south-east angle onwards. The floor of Room 3 seems to have perished, and its south portion contains a small closed furnace and an open hearth, separated by a rough wall; in neither was anything found to give a clue to their nature. Room 4 has a good floor of gravel concrete, with a quarter round moulding in the lower angles, 4 inches in thickness; below it is a layer of earth 6 inches thick with burnt material in it; then comes a lower floor $2\frac{1}{2}$ inches thick. The natural bottom is 9 inches further down. Partly in front of what we have supposed to be a doorway leading into Room 5 was a rectangular base, perhaps added later, and of uncertain purpose, measuring 2 feet 7 inches by 2 feet 1 inch; the edges of it were formed by old red sandstone slabs placed vertically, and inside these were laid alternately two layers of flange tiles and two layers of concrete; below these some black burnt material was found. The room formed in later times by uniting Rooms 5 and 6 had also a good gravel concrete floor, 2 feet 3 inches below grass and 8 inches thick. At the north-east angle of the room about 36 small coins were found at the level of the top of the wall, 6 inches below grass level. From under the floor came some coal and a little pottery. Rooms 7 to 10 call for no particular remark. In the later state of the house at any rate 9 and 10 seem to have been thrown into one, as were Rooms 5 and 6; whereas in earlier times 10 and 6 belonged to the corridor. Room 11, as we have said, seems to have been entered only from the north, and so also does Room 12. In each case there is a doorstep within the room, and it is possible that there were wooden steps (of which, of course, no trace was left) communicating with the south portion of the house, unless they were let off as shops. Room 11 has a pink concrete floor 4 inches thick resting directly upon the earth; just above this floor the upper and lower jaws of a human being were found. A little pink plaster remains in position on the west wall.

Room 12 has a floor of brown old red sandstone *tesserae*; the foundations of some erection, probably a low seat 1 foot 8 inches wide, run round the east and west and part of the south side. The floor is 2 feet 7 inches above the level of that of the corridor (16), and the *tesserae* are 1 inch thick; their concrete bed is 9 inches thick, then comes a layer of stones 6 inches deep, and the hard bottom is reached in 1 foot 9 inches more. Rooms 13 and 14 call for no further remark; in neither case does the actual floor level seem to be traceable, though in 14 two

layers of concrete were found below the general level of this range of rooms.^a Room 15 has a good floor of pink concrete with a quarter round moulding, but none of the plaster is preserved.

Room 13 was entered from the corridor (16), no doubt by wooden steps, and led into Room 14. Room 15 was not accessible from Room 14, but only from Room 17. The latter has the remains of a tessellated pavement of geometrical design in blue black, white, red, and brown, which is not very well preserved; the border is composed of old red sandstone *tesserae*. The floor is laid on a concrete bed 2 inches thick, then comes a layer of stones 5 inches thick, loosely laid, then a layer of mortar 2 inches thick, then smaller stones to a depth of 8 inches. The walls are preserved to a height of 1 foot 4 inches, with a dado of red plaster, above which are scanty traces of other colours. To the south lies Room 18, which is, however, a later addition, for it is traversed below pavement level by a prolongation of the south wall of the corridor (16). Beneath the floor of Rooms 17 and 18 runs a wall constructed of sandstone slabs 2 feet wide and 3 inches to 7 inches thick; they rest upon rough foundations, which are solid, so that we cannot suppose that the slabs covered a drain. This wall is not traceable beyond the north end of Room 17, while on the north side of the space (19) a wall of small stones, of the type usual at Caerwent, begins, which is almost in the same straight line; it terminates abruptly in the middle of the space, where there rested upon it a large slab of sandstone 2 feet 3 inches by 2 feet 7 inches by 1 foot 1 inch thick. The wall cuts through the middle of the earlier corridor wall in Room 18, and does not seem to have any connection with anything else. It is to be noted that the upper sides of the blocks are somewhat rounded by wear or weathering.

Room 18 has a tessellated pavement of which but little remains; the pattern was composed of a large circle of cable design, the middle of which has entirely perished, and the laying of the pavement is good. The corridor (16), which is entered on the east, is paved with old red sandstone *tesserae*, mended with fragments of slabs of the same material in some places. There is a good deal of plaster *in situ*, on the south wall red and white, and on the north wall yellow spotted with red with a red border. Bright yellow was the prevailing ground colour of the upper portion of the walls at the east end and red at the west. At the east end of the corridor a door leads into the courtyard.

^a Along the south wall of this room a small capital of sandstone was found with the necking and the top of the shaft 8 inches in diameter. See Plate LXVII. 5 for section.

To the south of Room 18 (though not accessible from it) is a space (numbered 19 on the plan) paved with large old red sandstone slabs which rest upon concrete foundations, as if the ground had been loose here. Close to the projecting south-east angle of Room 18 a pit was discovered. The exact outlines of it were not found, but the pit itself was excavated to a depth of 12 feet below the grass level and the bar penetrated 3 feet more through wet clayey stuff; a considerable amount of pottery was found to a depth of 10 feet 6 inches. The space (19) was



Fig. 5. House No. XII. Room 20 (looking south-east).

entered on the west by a doorway with a stone threshold and a step down from it; it appears to have had no east wall. On the south lies Room 20, which, as we have already seen, is a later addition. A large quantity of pottery was found in it, mostly at a depth of about 3 feet 6 inches below the grass level, including fragments of thin black lustrous ware and an entire *mortarium* with the stamp VM. Another almost complete was found outside the east wall, bearing a stamp of which little is preserved. Many oyster and snail shells were also found within

the room. Below this layer there was a stratum of ridge and flange tiles from the roof, and immediately below another of charred wood, the remains no doubt of either the wooden floor or the roof. A coin of Constantine was found in the middle of the room at a depth of 4 feet. The plaster ends at about this level, but the wall goes on 1 foot 6 inches further before the clay bottom is reached. On the south side it has a tile course just under the plaster, and the foundation is recessed 4 inches back where the plaster stops. On the east there are small recesses like pigeon holes at the base of the wall, 5 inches to 8 inches wide by 10 inches deep by 8 inches high, the object of which is quite uncertain (fig. 5).

The courtyard of the house shows two different levels, the upper a gravel and mortar floor 3 feet to 4 feet below the grass level, under which were found plaster, baked roof tiles, and mortar. At about 5 feet 6 inches to 6 feet below the grass is another floor, or at least a layer of gravel and rubbish, and at 6 inches below this we get pottery of an early type, fragments of roofing tiles, and a worn coin of Domitian. Below this again comes homogeneous red clay which we tested for another 3 feet 6 inches without finding any change. On the south side of the courtyard an isolated square foundation was found 6 feet 2 inches below the grass level, which was built on the back slope of the mound that preceded the city wall. Outside the wall of the courtyard two very fine brooches were found, one of wheel pattern just south of this square foundation, the other further east; and in the south-east angle of it a fragment of a base of a large column of sandstone, and a small capital with a square abacus. (Plate LXVII. 6, 7.) Owing to its great depth, however, the courtyard was not very thoroughly trenched. Its south wall is for some distance double, the original wall having fallen away to the south, and necessarily been reconstructed, but to the east of Room 7 they coincide. The wall is built upon the back slope of the mound.

Returning to the rooms on the north side of the courtyard, we have already seen that the east wall of Room 21 was originally prolonged southward; we found it below floor level running just to the west of the west wall of Rooms 18 and 19, and rising apparently above pavement level, so as to be in use in the later house, after passing the entrance into 19. In the earlier house a crosswall going westward from it separated Rooms 23 and 24; this, though we did not find it preserved above floor level, may have continued to exist, inasmuch as Room 23 has a floor of rough concrete and Room 24 a floor of stone *tesserae*, though the concrete bed may have been only the foundation of a tessellated pavement. Outside the wall of Room 24 a gravel concrete floor came to light at a depth of about 4 feet. The walls of these rooms have to a great extent disappeared.

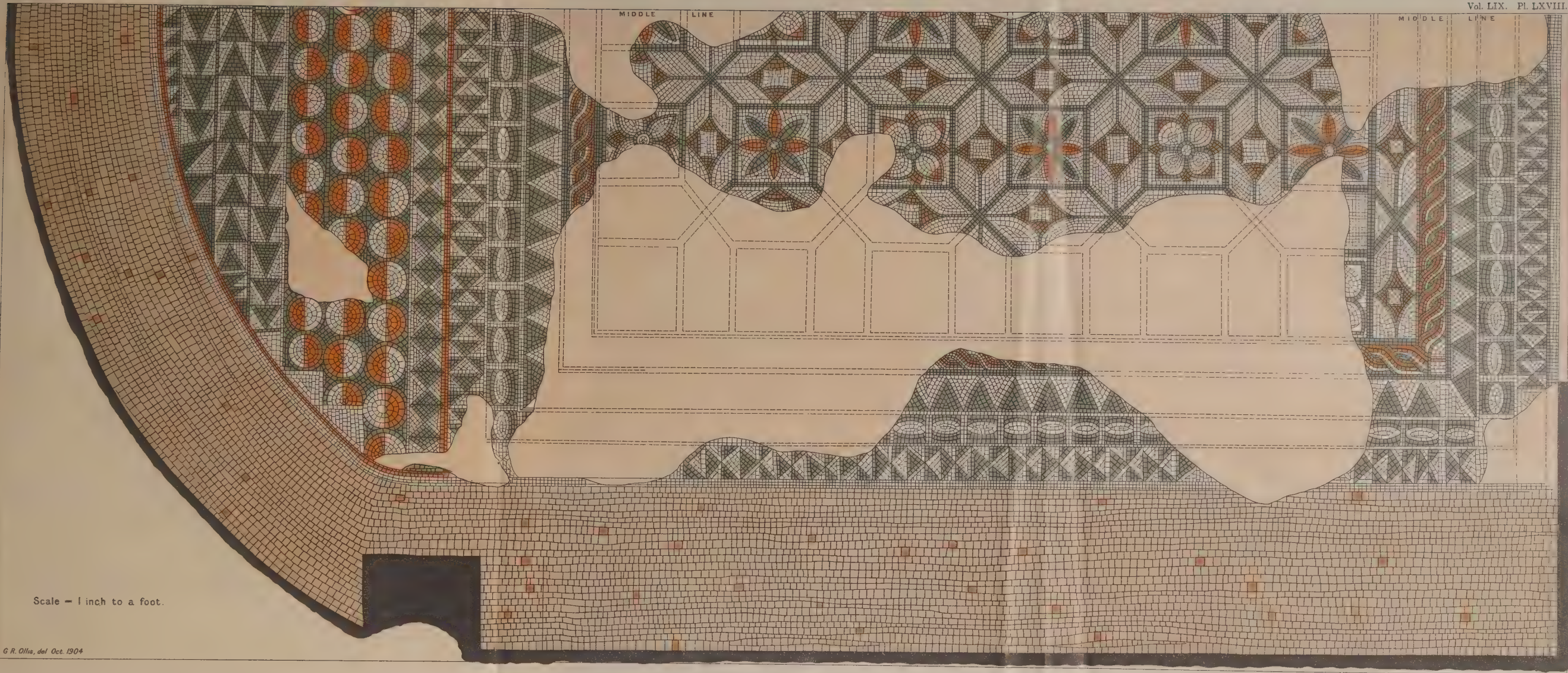
Room 21, which is entered from Room 17, has a floor of gravel concrete 3 inches in thickness with an earlier floor of the same material 4 inches thick immediately below it. The north wall of the room, which is preserved to a height of 1 foot 8 inches, shows traces of two layers of plaster; the lower is pink spotted with red, the upper is white or pale green. The roof was apparently covered with stone slabs. Room 25 is entered from the north by a doorway near the north-east angle, with a rough step block inside the room. The floor of gravel concrete is well preserved at this point. Room 28 has a tessellated pavement with a geometrical pattern in black and white, with a border of old red sandstone *tesserae* only $\frac{1}{2}$ inch square. A remarkably large number of sawn pieces of stag's horn, some of them of considerable size, were found here. Room 29 has a similar pavement to 28 with a more elaborate design in the middle, but the whereabouts of the door between them is uncertain, as the dividing wall is destroyed down to the floor level, and neither of the pavements is preserved except in the southern portion of the room. Room 29 may also have been entered by a doorway on the north. On the west it leads into a large room (36) with an apse at the western end, with a very much flattened curve, divided from the rest of the room by two pilasters; the tessellated pavement is of good design and is well preserved. (Plate LXVIII.) In the apse are three rows of circles divided diametrically, one half being red, the other white, while the main portion of the room is occupied by squares enclosing large flowers.^a

There was an earlier and smaller apse, the foundations of which were discovered when the pavement was removed, but which cannot be shown on the plan. The angle walls of the later apse are very thick, and, to give greater strength, two buttresses were added outside as well.

In the later house, Rooms 22,^b 26, and 30 seem to have been the prolongation to the west of the main corridor. All have a floor of *tesserae* of old red sandstone. To the south of these again come other rooms forming the west wing. Room 27 appears to have been a latrine with a gutter, still preserved round three sides, 11 inches wide and 3 to 5 inches deep, cut in sandstone slabs, which are 2 feet in width. The blocks at the north-west and north-east angles may have supported a timber seat, though the gutter on the north side is wanting, and

^a The pavement has been removed to the Newport Museum.

^b In Room 22 were found two fragments of small columns, one 9 inches in diameter, the other $6\frac{1}{2}$ inches in diameter, with a small round capital without abacus (Plate LXVII. 8); and a capital $5\frac{1}{2}$ inches in diameter, with an abacus 9 inches square (Plate LXVII. 9). In Room 26 a small column with a bulging shaft 2 feet 3 inches in height was found (Plate LXVII. 11).



Scale — 1 inch to a foot.

G. R. Ollis, del Oct. 1904

CAERWENT.—MOSAIC PAVEMENT IN HOUSE XII. ROOM 36.

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there are no traces of any provision for carrying away solid matter, in contrast to the arrangement of the latrine in House No. III.^a The outlet is through an irregular aperture near the south-east angle, which leads into a drain covered with big stones and paved with roof tiles; the bottom of this is 5 feet 4½ inches below the grass. It runs out through the south wall of the courtyard, falling 4 feet in this part of its course, beyond which it was not traced.^b

Room 27 is at a considerably lower level than Room 31, and there is a space between the north wall of Rooms 31 and 32 and the south wall of Rooms 26 and 30 without interconnection, which would make it appear at first sight as if 31 and 32 and the rooms to the south of them were added later. But, on the other hand, it should be noted that in the space between these two walls there is a concrete floor, which comes right up to the north wall of 31 and 32, but not to the south wall of 30, which may have been inserted afterwards. Room 31 has a good concrete floor at a high level. Room 32 has no determinate floor, and the south wall seems to be a later insertion blocking an original doorway with a pilaster on each side, corresponding to that which leads from Room 33 to Room 34. Rooms 38 to 41 were, as we have already seen, formed at the expense of an earlier double corridor. In Room 38 the upper floor has perished and the east wall shows a coat of white plaster at a low level, against which, in the north-east angle, a stone mortar, formed of a part of an old capital turned upside down and hollowed out, was to be seen *in situ* resting on the lower floor of clay and rotten concrete, 3 feet 6 inches below the grass level.

Here were also found two fragments of a column, 9 inches in diameter, the one 1 foot 5 inches, the other 9 inches in length, with a dowel hole in one end 2 inches square. Near the north wall, and still under the late floor, was a piece of a fallen arch of flange tiles and some baked roof tiles.

We have already noticed that these rooms are traversed below floor level by the east wall of the earlier west corridor. This wall has in many places white plaster splashed with black *in situ* on both sides, and so has the wall parallel to it to the east (on the west side at least).

The later floor of Room 39 consists of concrete, and so does that of Room 40, while that of Room 38 has perished. The east portion of Room 37 seems to have been thrown into the north corridor after having in the original construction

^a *Archaeologia*, lvii. 308 and Plate xl.

^b To the west of it are some foundations belonging apparently to an early period, which could not be connected with any other walls.

served as a part of the double corridor on the west of the house, inasmuch as it is traversed by a wall, and was entered from Room 30 by a step, leading down on to a gravel concrete floor. Its later floor consists of large slabs of old red sandstone. The wall between Rooms 37 and 38 is obviously a part of the latest construction.

The main western wall of the house was found to have been reconstructed, both the old and the new walls being traceable. The western wall is the later, as from it start all the later crosswalls. It is further to be noticed that the eastern wall corresponds in line with the pilasters of the apse of Room 36. Room 42 is therefore a later addition; it has a gravel concrete floor, and no definite traces of doorways. Its side walls are not bonded into the main wall, and it may have

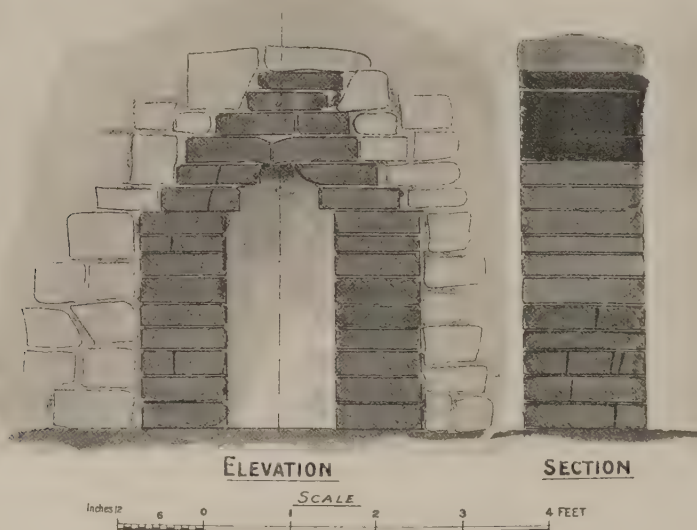


Fig. 6. Tile flue, House No. XII. Room 41.

been quite an afterthought. Room 43 occupies a similar position, and has been enlarged to the south even later. Rooms 41 and 35 are also later additions. In the north wall of the former there is a finely preserved tile flue, 1 foot 3 inches wide, with the sides drawn in at the top to form the roof, the total height being 3 feet 1 inch (fig. 6). It is remarkable that there is no trace of a hypocaust on either side of the wall, and the tiles show no traces of burning, though there was a layer of burnt stuff in each room, that in Room 40 lying between two concrete floors. A fine spearhead was found 3 feet down on the west side of Room 41.

Room 35 was pitched, and on the south side two open hearths were found, and a column drum 1 foot 9 inches in diameter.

The different periods in this portion of the house are very difficult to distinguish, but it seems clear that the original west corridor of the house was double, and that to this house belonged also the rooms on the north and the north corridor. Rooms 23 and 24 also belong to an early period; and we must suppose a room to the west of 19 and 20. It is more difficult to say at what time the other alterations in the plan of the house occurred, when the new west wall of the house was constructed, and whether this was or was not contemporary with the suppression of the double west corridor. Nor is it easy to see the interrelations between the alterations in the west part of the house and those in the east portion. We have seen that the whole east portion is probably later than the original west portion, but whether the alterations in the west portion are contemporary with the erection of the east part is not certain. There were no differences of construction, except that the transverse walls which divided up the original west corridors were of inferior work.

HOUSE NO. XIII.

This building^a stood on the east side of the road leading to the south gate, and opposite therefore to House No. XII. Only a very small portion of it is included within the field in which we were at work, part of its site being now occupied by the farm lane, while the rest lies on the east side of it. The main entrance, however, is preserved. It measures 10 feet 6 inches in width, and had double doors; the stones in which the iron sockets were placed are still *in situ*, and the arrangement is precisely similar to that of the entrance to the courtyard of House No. III.^b Here, however, there is an inner threshold, 8 feet from the outer one, formed of slabs of sandstone. There is no trace of socket holes in the blocks at each side of this, and probably there was only an inner arch without a second door; the north side of it could not be cleared owing to the presence of large trees.

On the south side of this gateway there appears to have been a room (1). Close to its south-west angle, against the outer wall of the house, stood a block of

^a The dimensions of the spaces numbered on the plan are as follows: (1) $7\frac{1}{2}$ feet by $12\frac{3}{4}$ feet; (2) $13\frac{1}{2}$ feet by $12\frac{3}{4}$ feet; (3) $22\frac{1}{2}$ feet long; (4) 31 feet by 18 feet.

^b *Archaeologia*, lix. 102, fig. 9, and pl. ix.

sandstone, which perhaps served as a mounting block. To the south again after an interval came another room (2) with a concrete floor and a doorway 6 feet 4 inches in width leading out of it to the east, where a pitched floor was found. In this room, 2 feet 2 inches down, a small altar was found in two pieces, measuring 1 foot 9 inches high.^a It bore no traces of any inscription. The spaces numbered 3 and 4 lay to the south again; and the south wall of the latter was traced as far to the east as its return northwards.

Room 4 was entered from the street direct. Its south portion was occupied by a large T-furnace, lined and roofed with sandstone slabs, 4 inches to 6 inches in thickness, which was stoked from the north side. The longer arm of the T measures 6 feet 8 inches in length, the east side being formed by one large slab, 2 feet 3 inches in height, and is 2 feet in width, while the lateral arms are 3 feet long and 1 foot 4 inches to 1 foot in width. On each side of the main arm the floor of the room, which is on a level with the top of the slabs, is paved with old red sandstone slabs 2 inches in thickness. Black earth was found in the main arm of the T, and greyish dirt in the west arm, the floor in both cases being about 6 feet 2 inches below the grass level. In samples of the earth examined by Mr. Clement Reid carbonised tares and wheat were recognised. A coin of Constantine was found down at this level, and a part of a small pot of red ware with incised ornamentation.

The south-west portion of the house has been built over an older house, the north-west angle of which was discovered under the floor of Room 2, outside of which it had a doorway opening to the north with a threshold 6 feet 6 inches in width, composed of two slabs of sandstone grooved to take the door frame. Beyond this point the northern wall could not be followed, but the western wall ran on under 3 and 4 to 12 feet 6 inches to the south of the latter room. From this point the wall ran east as far as the boundary wall of the lane, at a considerable depth (about 8 feet) below the surface, and only about 15 feet from the city wall. It appears to have been built on or just behind the ridge of the mound, which has been smoothed off, the trench for its foundation being visible. It is of very solid construction and batters considerably on the north. In the south-west angle some plaster and pottery were found, and at 11 feet below the surface an unidentified coin. A little to the south of the wall a lime-kiln was discovered, made possibly by the builders of the city wall. It is circular, about 8 feet in diameter, and at about 13 feet below the modern grass level cuts through the

^a For section, see Plate LXVII. 13.

slope of the mound ; at about 3 feet further its sides appear to be steined. Below this point was a layer of black earth, and the bottom of the pit, which was dished, was reached at about 20 feet below the modern grass level.

The north wall of Room 4 of the later house is built right over a filled-up well, which probably belonged to the earlier building. The foundations of the wall stopped at about 5 feet 6 inches below the grass level. The well appears to have been lined with stonework as far as 16 feet down, but below this, where it only measures 4 feet (and less) in diameter, and is cut through very hard stuff, the clay stopping at 19 feet 1 inch down, it certainly was not. It appears to have been intended to collect surface water, for no spring made its appearance, contrary to what was the case in most other wells at Caerwent. The depth was 23 feet 10 inches below grass level. A good deal of fine earth and mud was got out and sent up for examination. Not many seeds were discovered, and a complete list is therefore postponed. A good deal of pottery, and bones also, but no coins, were found. The pottery seemed mostly to be of comparatively early types, resembling that found in the mound. One whole pear-shaped black pot was found at 19 feet down ; it was misshapen, and probably discarded for this reason. Of iron objects only a few nails were discovered ; two small bone counters may also be noted.

Between House No. X. and House No. XIII. runs the road to the south gate. In this portion of its course it is not very clearly marked. Where it issues from the churchyard wall east of the slab drain near House No. X. it is only 13 feet in width,^a and by no means in a straight line for the south gate. Where it next becomes traceable, to the east of the yard of Houses Nos. X. and XI., it has developed into a large open space, paved with one layer of gravel resting on the hard red clay, which in the northern portion is only 6 inches to 8 inches below the surface, though north of Room 11 of House No. XII. it is 2 feet 9 inches to 3 feet down.

Between the north portion of House No. XII. and House No. XIII. the road becomes more definite. Here it is 20 to 27 feet in width, and the bed seems to be 1 foot 6 inches thick in one place, where there was a hole in the ground perhaps, and 6 inches in another, but elsewhere to be bedded directly on the clay. Its surface is here 2 feet 10 inches below ground level.

Further south it is 4 feet 3 inches down below grass and roughly pitched, and this is the case where Room 1 of House No. XII. is built on it. To the north

^a The roadbed here lies 1 foot 10 inches below grass ; it is about a foot thick, and there is clay under it.

of the gate it varies from 8 feet to 8 feet 3 inches below grass, but the modern ground level rises near the wall. Here the bed is 1 foot 2 inches thick, formed of stones and pebbles, and of considerable hardness. The slope of the mound down to and under it can be traced. There were also some indications of an earlier road level 9 feet 5 inches below the surface.^a

The annexed plan (fig. 7) shows the progress of the excavations down to November, 1904.



Fig. 7. Plan of Caerwent, showing discoveries down to November, 1904.

^a Further details will be given in our report on the south gate itself, which was excavated in July, 1905.

XVI.—*The Linares Bas-Relief and Roman Mining Operations in Baetica.*

By HORACE SANDARS, *Esq.*

Read 9th March, 1905.

At a short distance from the Saltus Castulonensis, one of the northernmost points of the Sierra Morena, in the Province of Jaen (Spain), the mountains become blended, to the east, with a series of ranges running with a southerly trend towards the Sierra Nevada. This, in its turn, is merged into other ranges that stretch their arms to the coast of the Mediterranean on the south; while their main body continues to the west towards the mouth of the River Baetis, and terminates in a series of elevations, which include those known to the Romans as the Ilipula Mountains, the Alpujarras of modern times. From my point of departure, and to turn again to the north, the Sierra Morena, which the Romans knew as the Montes Mariani, stretches away in a south-westerly direction, broken here and there by valleys and gorges, but still forming a continuous range, until it dips into the sea on the eastern side of the River Anas, the Guadiana of modern geography. These mountain ranges, or rather groups of ranges, form the eastern and western watersheds of the River Baetis. Indeed, they may be said to form the casket which encloses the jewel of the Spanish peninsula, the rich, the fertile, the beautiful Baetica of the Romans, the Andalucia of to-day.

It was up the attractive valley of the Baetis that the successive races, or nations, who succeeded in obtaining a footing on the southern coast of Hispania pushed their way, attracted by the great natural advantages of soil and climate, and by the mineral riches of which the mountain ranges were bursting to be free. Who the earlier races were, and how far they penetrated towards the upper part

of the valley does not concern us now. Even the Phœnicians, those irrepressible merchant venturers, have left no trace, so far as I am aware, of any permanent

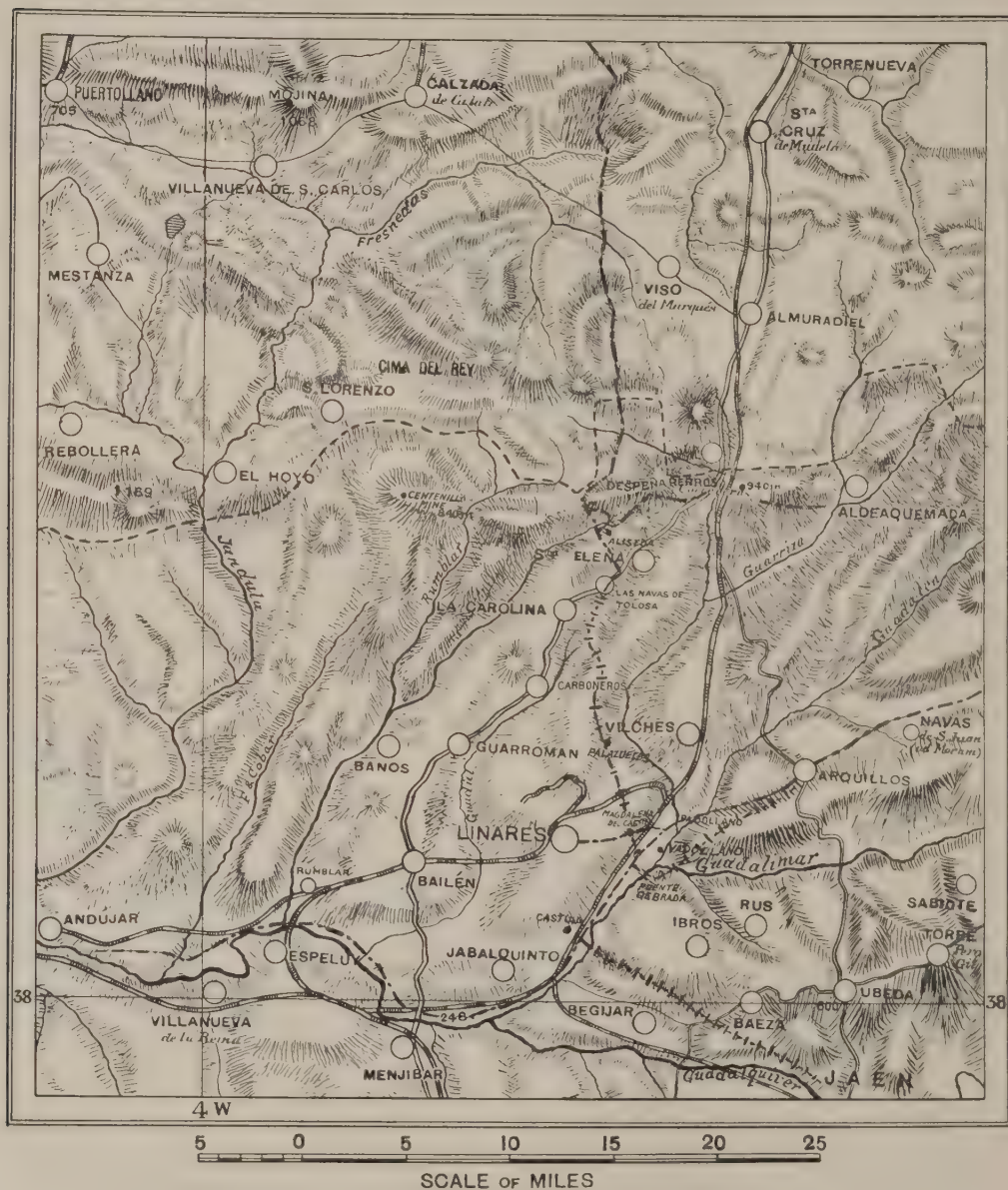


Fig. 1. Map of part of the Province of Jaen, showing the location of Castulo, Palazuelos, etc. etc.

occupation there. It is, however, otherwise with the Carthaginians, who undoubtedly penetrated to the northern confines of the valley, where they had towns and fortresses, and where they, in all probability, worked the mines.

Both ranges, the eastern and the western, are highly mineralised and were largely worked in ancient times; but in order to limit my field I will deal with the western range only, the Mariani Mountains, which stretch for more than 250 (English) miles from the Saltus Castalonensis to the sea, and which afford unmistakable evidences, over their entire length, of the mining activity of the "old men." Indeed, only those who have had an opportunity of visiting the country and of making some slight acquaintance with the old mines (it is difficult without giving many months and perhaps years to the study to acquire more) can form an idea of the activity of the Romans in this part of their dominions. It can only adequately be described as stupendous when one considers the primitive appliances and methods at their disposal for carrying out their great works. It meant industry, organisation, a long occupation, and a thorough mastery of the art of mining of which we have but a slight conception. In the matter of communications alone the Romans were certainly in advance of modern times; the Baetis was navigable as far as Corduba; they had a fine highway on both sides of the valley, while the Sierra between the Anas and the Saltus Castalonensis was traversed by roads in ten different places.

There appear to have been three distinct periods in the mining history of the Sierra Morena. First there was the Roman period, which lasted, in all probability, some hundreds of years; then there was a blank. Then came a rush of mining adventurers, and haste to peg out claims, in the middle and towards the end of the sixteenth century; induced perhaps by the great success for some years of the King of Spain, who owned a rich silver mine called "Guadalcanal" in the central part of the Sierra to the west of Corduba, and which he himself directed from Madrid. No mineowner of to-day could keep more watchful eye on his property than did Philip the Second. The most detailed reports and accounts were regularly sent to him, and he replied to them and commented upon them himself. He even went closely into the calculations as to whether it would pay him best to employ black slaves or white men in his mines, and as to the proportion of black women to black men which would be necessary to provide for the comforts of the former; and he gave the most precise instructions as to the disposal of the remnant of the gangs (he did try the experiment) when the inevitable day came for shutting down the mine. Then, again, there was a blank, which lasted until the middle of the last century, when a body of adventurers (they

were I believe mostly Frenchmen, and, in any case, the Frenchmen were in the van) invaded the Sierra Morena and systematically set to work to smelt the old Roman slags. They are believed to have done so in many cases with much success; and they are reported, and I accept most of the reports as being founded upon fact, to have found many treasures which have long since vanished without leaving a trace behind them. But be this as it may, one permanently useful thing they did do, and that was to draw attention to the old Roman mines that had lain hidden away for centuries, and to incidentally lead to their being reopened and reworked, principally by foreign companies, by which Spain and archæology have largely benefited. The Romans mined most of the minerals to be found in the Sierra, but nothing is known of their having exploited the iron ore deposits in the southern section of the range. In the northern portion, that is in the neighbourhood of the Saltus Castalonensis, they mined copper to some extent, perhaps antimony, but principally lead. The lead ore here is not very rich in silver, but it is exceptionally pure and very easy to smelt.

About fifty English miles further south they had a rich "silver" mine and many lead mines in the Sierra itself, while in the plateau which lies to the south of the main range and where the granite crops out (the mountains themselves are mostly silurian) they worked both copper and lead. At the westernmost edge of this granite plateau they worked extensively some lead mines which are very rich in silver. A little to the west of this point coal is found, but it is not known that the Romans worked it. Some miles to the south again and in the direction of Corduba, but well within the range, they had a very important copper mine, to which I will again refer. Beyond this mine they found a fresh field of operations, a mining district where the veins carry mixed deposits of lead ore and blende (sulphide of zinc). The lead is here, again, very rich in silver. The Romans did not know how to treat blende metallurgically, but they were far too good miners to be ignorant of the best methods of taking out the lead ore from the mine and leaving the (to them) useless stuff behind, and this they did to perfection. They also followed on with their mining operations down the length of the Sierra until they came to the well-known cupreous iron pyrites deposits of the Rio Tinto and Tharsis, besides many others in the same district. Here their mining operations surpassed in grandeur all they had done elsewhere; and it is not surprising that they should have had important settlements at both places, and many interesting and, in several cases, valuable objects dating from that period have been found. In the case of the Rio Tinto mine such objects have, unfortunately, been dispersed and will probably never be seen again, but in the case of the

Tharsis Company everything has been most carefully preserved, and their museum will well repay a visit. I visited Tharsis in December last, and gathered together much interesting information as to the mining practices and methods of the "old men." The modern open casts are stupendous. One is overawed on looking down some hundreds of feet into the crater which has been made by modern mining engineers; but when an examination of the older workings reveals the fact that the Romans had converted a mountain into a valley, to speak somewhat figuratively, and had gone through some of the hardest rock to do so, it will be realised that they were fine miners too. Their old open cast was most interesting from an archæological point of view. The sides of the excavation at one point showed distinct and unmistakable traces of the old Roman method of working by fire. I have seen nothing to equal it since a visit, about eighteen months ago, to the celebrated Roman gold mine of Verespatak in Transylvania, where a trachyte mountain, which had erupted from the valley, was literally hollowed out from the top by the "old men," and in most places solely by the aid of fire.

I will return for a very short time to the copper mine in the Sierra, near Cordova, to which I referred just now. The nature of the mineralised ground here is not the same as at Rio Tinto or at Tharsis. It is not a vast deposit, but a vein or cleft in the earth which has been filled with matrix and mineral, and, to judge by the surface indications and the great extent of the old workings, the mineral must have been rich in copper. An English company is at present engaged in endeavouring to get down below the old workings. They are down nearly 700 feet, but are not beneath the "old men" yet. They have, however, discovered some of the mineral which was left by the Romans, probably as not being good enough for them to take away, although it is quite rich enough for treatment by modern metallurgical processes; and it is quite probable that the Romans found in the higher levels that very valuable form of mineral known as "grey copper," or chalcocite. There was a Roman settlement here, and several terra-cotta images, amongst probably many other things that have disappeared, of fairly good style have been found. The Latin name of the mine is not known, but there can be but little doubt that this is the mine referred to by Pliny when in book xxxiv. chap. 2 he refers to the "*Aes Marianum quod et Cordubense dicitur*," which was almost as excellent as Aurichalcum for making sesterces and double asses. The mine is near Cordova; it is situated in the Mariani Mountains, and the copper must have been of very good quality.

And now I will cross the border of Baetica into Tarraconensis and again go north to the point where the two Roman highways, after having finally crossed

the Baetis, and while following the head of the valley to the point where it becomes merged with the foot-hills of the Sierra Morena range, left their northerly trend and took a more easterly direction.

The centre of interest in the district in question is the site of the ancient town of Cástulo, which lies on the northern bank of the River Guadalimar. The origin of the town is lost to history, but that it was an important place and long in the occupation of the Carthaginians is an historical fact. It played, indeed, an important rôle in the strife between the Carthaginians and the Romans at the time of the Second Punic War. It was spared from destruction by the elder Scipio Africanus after he had defeated Hasdrubal near Baecula, and it henceforth became a flourishing Roman city. Its strategical position, as commanding the



Fig. 2. Sculptured Stone from Cástulo.

roads which gave access to Carthage Nova in one direction, and to Libisosa, Valentia, and the highway to Gaul and Rome in the other, and its topographical position as the distributing and perhaps administrative centre of the rich mining district which lay within its influence, all tended to give it importance. Its site can be readily recognised; the walls can be followed, the position of the baths and the site of the cemetery located; the foundations and part of the walls of two of the towers of the fortress, which appears to have been separated from the town proper, can still be seen; but all the rest has vanished. Some of the stones which

once formed the walls of the residences of the wealthy inhabitants and of the public buildings have been utilised in the construction of neighbouring towns, buildings, and walls, and thus many important inscriptions have fortunately been saved. There is a bridge not far away which contains many stones with inscriptions, figures, and architectural designs, which have been brought from Cástulo, and which, although long known and referred to by Spanish archæologists, would well repay a careful study to-day. Two examples of sculpture of archæological interest from Cástulo are in the courtyard of a house in Linares, about four or five miles (English) from Cástulo. They apparently formed part of the frieze

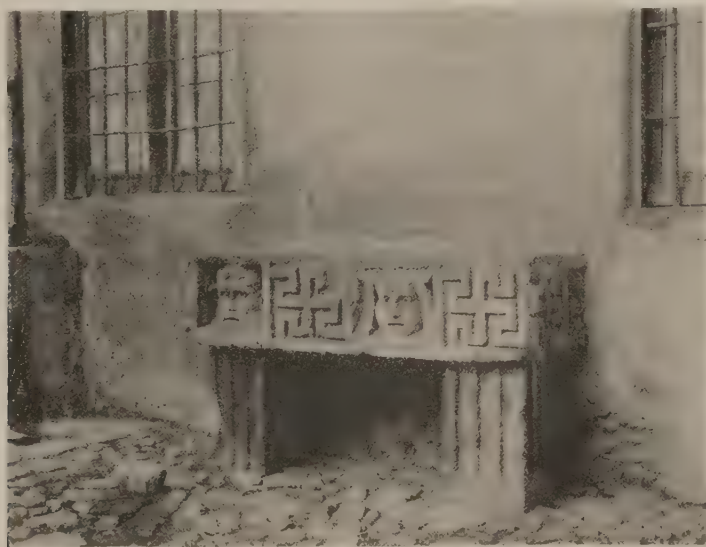


Fig. 3. Sculptured Stone from Cástulo.

of a theatre or temple, and the spot from which it came can easily be recognised. (Figs. 2 and 3.)

I have referred to the two roads that passed by Cástulo. Both had to cross the River Guadalimar, which runs in front of the town, or one or more of the more northerly streams, before they could strike for the passes which led them across the surrounding Sierras. On the map of the district (fig. 1) a bridge (Puente Quebrada) over the Guadalimar is marked about five miles from the town, and a short distance below the confluence of that river with the Guadalen. It stands in close proximity to the Roman road, and may have been on the route which that road took in order to reach the places which are mentioned on the Vicarello vases as

being on the highway between Cástulo and Libisosa. This highway is not shown on the Antonine Itinerary, but it must have formed an important artery of communication in the times of the earlier emperors, as three inscriptions bearing upon it, of the times of Tiberius, Trajan, and Hadrian, have been found within the first 30 miles of its course. It is true that to gain a clear route the road would again have had to cross the Guadalimar at a point higher up the stream, but which is not shown on the map. Older maps show, however, that the Guadalimar was traversed by two more bridges in close proximity, described as the "old" and the "new." The bridge to which I refer would, moreover, have served the double purpose of placing Cástulo in communication with another Roman road which probably passed through or near the present towns of Baetia (the modern Baeza), Baecula, Tugia, and thence through the Sierra to Acci. The structure of the present bridge cannot, however, be considered to be Roman, because, although the walls of Cástulo had, as we are told by an inscription, been allowed to fall into disrepair, there is no catastrophe known to history which would have so shattered the monuments and buildings of the town as to render them useless for any other purpose than for that of erecting new houses or bridges. The bridge is certainly not Moorish, and it is fair to assume that it was erected in its present form in the fifteenth or sixteenth century, possibly in the latter half of the fifteenth, when the ruins of the town had to be cleared of the robbers who had taken refuge within them, and permission was granted to utilise the remains for new buildings.

Besides the two roads already referred to there was a third road which, starting from Cástulo, and taking an almost direct northerly course, made for the *Saltus Castulonensis* and thence crossed the Sierra and joined the highway from *Emerita Augusta* (now known as Merida) to Libisosa, Valentia, and *Cæsar Augusta* (the Zaragoza of to-day), and so linked the mining district of Cástulo, and indeed the whole of Baetica and the ports on the east coast, with Sisapo, that famous mercury mine of the Romans, the Almaden of modern times. This road is not correctly shown on maps of ancient Spain, so far as I am aware, but as to its existence there can be no possible doubt. It has been traced into the Sierra by the Spanish Government engineers who prepared the excellent maps which deal with this part of Andalucia; it has also been located after it left the Sierra near La Aliseda, and there are two inscriptions from Cástulo which refer to it directly: one to the effect that Quintus Thorius Culleo repaired at his own expense (probably in the time of Augustus) the road that led to Sisapo through the *Castulonensis* pass, which had been damaged by the continuous rains; the other making mention of the *Via quæ per Cástulo(onis) Saltum Sisaponem ducit*.

There is, moreover, a Vespasian inscription of the year 79 A.D., cut on a block of black marble from which a previous inscription has been effaced, to the effect that that emperor had repaired the road, had built new bridges and repaired the old ones *ab Iano ad Oceanum*. This stone is now in Seville, and is said to have been found in the neighbourhood of La Aliseda; in which case it probably referred to the road in question. The line of the portion of the road lying between La Aliseda and Cástulo is not well defined. The one shown on the map (fig. 1) is conjectural, but it may be assumed to follow the direction of the Roman road, and it certainly follows the road which, before this part of Spain was colonised in the latter part of the eighteenth century with Germans by Charles III., and new towns were built and new roads made, connected the Roman road through the Sierra with Cástulo and its bridges. If the road be followed on the map in the direction of the Saltus, which lay probably to the west of Despeñaperros, a point marked Palazuelos can be seen about $12\frac{1}{2}$ English miles from Cástulo. The Spanish word Palazuelos means "little palaces." Here there stood an important fortress, but before describing it I must once more revert to Cástulo and to its historical associations. I have already mentioned that it was a Carthaginian city, and history records that the great Hannibal married a lady of Cástulo whose name was Himilce. Romance says that she was the daughter of a prince, and that she brought as dower to her husband some rich mines near Cástulo. Now the only extensive mines near Cástulo are those which are in the immediate vicinity of Palazuelos; indeed, they are contiguous to and, in fact, run under the castle, and are to-day known locally as the "Pozos de Anibal" or "Hannibal's Shafts or Mines." It may be a coincidence or the offspring of lively imagination that the name of Hannibal should be associated with these mines, but local tradition dies hard in Spain.^a

Pliny, too, refers to Hannibal and his mines. He states in book xxxiii. chap. 32, that "it is a remarkable fact that the shafts opened by Hannibal in the Spanish provinces are still worked, their names being derived from the persons who first discovered them. One of these mines, which at the present day is still called Baebelo, furnished Hannibal with three hundred pounds weight

^a As an instance I may again mention the old Roman highway which went from Cástulo to Libisosa by the AD MORUM; SOLARIA, MARIANA, and MENTESA of the Vicarello vases. This road, as I have already pointed out, is not shown on the Antonine Itinerary, and at the present time it might be hard work to follow it, but yet in that part where it can be traced and it has been proved to exist it is still locally known as the "Via Cartagines" or "de Anibal," the "Carthaginian" or "Hannibal's road."

of silver per day. The mountain is already excavated for a distance of 1,500 paces, and throughout the whole of this distance there are water-bearers standing day and night baling out the water in turns, regulated by the light of torches and so forming a great river." In guide books, and history too, the Hannibal mines of Pliny are associated with the mines at Palazuelos, but I much doubt their being the same. Pliny surely does not say so, and there is nothing connected with the working of the mines to show that they could have produced anything approaching the quantity of silver mentioned, even if in those days they produced silver at all, and I merely quote the passage to show that in Pliny's time, that is some three hundred years after Hannibal left Spain, his name was still connected with mines in that country. I will now return to the Fortress, which was certainly associated with the "Pozos de Anibal" mines, and the mines with it. Until some twenty years ago considerable remains of the castle were to be seen; the circuit of the walls was nearly, if not quite, complete, and the towers stood some 6 feet above the ground. But a new invasion of devastators took place. A German company denounced the old mines, and set to work to reopen them with the object of discovering some of the silver which they fondly hoped that Hannibal might have left behind him. Their engineers sunk a new main shaft into the old mine, and, finding in the old castle a quarry to their taste and conveniently at hand, they gradually carried away the stones of which it was built until nothing remains, with the exception of a few feet of walling, but the gaping foundation trenches to show where the proud fortress once stood.

There is, however, one redeeming feature in this tale of vandalism, and it is, that one of the engineers in charge of the mining operations made a complete plan of the fortress and of the adjacent constructions, and I am indebted to him for a copy of it. The walls of the fortress were provided with towers and enclosed a quadrangular space of irregular form, with many buildings on the western and southern sides of it. The entrance from the west, that is in the direction of the road to Cástulo, appears to have been protected by a double wall; and a large level space in the same direction, which was possibly used as an exercising ground, but more probably as a site for the miners' dwellings or huts, was also surrounded by a wall. There are places where the old workings have caved in.

The castle and the neighbouring buildings and walls were constructed with blocks of local sandstone without mortar. Some of the stones are quite large. I will not venture an opinion as to the race that built the castle. If it was erected by the Carthaginians and subsequently taken over by the Romans, the latter must



ROMAN BAS-RELIEF FROM LINARES, SPAIN. (3 linear.)

Published by the Society of Antiquaries of London, 1905.

have utilised it for some six hundred years, because there can be no doubt at all that they were the last to occupy it. All the remains of pottery, of brick, of roofing, and the hypocaust tiles which I have picked up are Roman; and the storage cisterns for water, which are in an excellent state of preservation, are Roman too. The castle of Palazuelos is by no means the only building showing the same style of construction in this part of Spain. There is another fortress built of large blocks of stone, and again associated with a mine, not many miles to the west; while to the east, in the small village of Ebros, in the direction of Baeza (or Baetia), are still the remains of a wall or walls, "the mysterious walls of Ebros," built in the same style, but with much larger blocks than those at Palazuelos.

I have said that one of the German engineers made a plan of the fortress, but he did more; he discovered in 1875, in a cottage where an old woman was busily washing her linen upon it, the Linares bas-relief. He inquired where it came from, was told that it had been picked up near Palazuelos; he purchased it, and so saved it for all time.*

The bas-relief represents a gang of stalwart men going leisurely to their work. (Plate LXIX.) The stone is of light red sandstone, and, when complete, must have taken the form of a framed picture about 20 inches square. It is obviously not the work of an artist of talent, but the sculptor knew what he wanted to represent, and he has succeeded in doing so graphically and unmistakably. The foreman, being a person of much importance, is a big man. He carries in his right hand a pair of large double-looped tongs, while his left hand is passed through the ring of some hollow object, which may be a bell. The miner who precedes him carries, in a somewhat unnatural position, a pick, or rather an implement which served either as a hammer or a pick. The miner, in front of him again, carries a lamp. Whether the other two in the front row carried anything or not it is impossible to say. The men are represented as moving

* The bas-relief was first described by Monsieur Daubrée, an eminent French mining engineer who wrote several very interesting accounts of Roman mining operations in France in the *Revue Archéologique* of April, 1882. Sr. Berlanga of Malaga, whose erudite works on the bronze tablets of Malaga, Osuna, and Aljustrel are but too little known outside his own country, described it and reproduced a photograph of it in 1884, while others have referred to it in a perfunctory manner at times, or have described it incorrectly. The foreman has been turned into the god Mercury, the miners into Christian martyrs, and there have been dissertations on the archaic character of the sculpture by reason of the supposed archaic form of the eyes; but such theories and conclusions have generally been due to the fact that the writers who dealt with the subject had but incorrect representations of it before them.

along, and that they are walking through a gallery is, I think, shown by the striations in front of the foremost man. Each man has the middle part of the body protected, apparently, by short drawers, while over them there is what appears to be a leather band or belt; probably a very useful protection against friction and bruising by the baskets in which they carried the rock and ore to different parts of the mine. The appearance of the eyes is due to the long exposure of the stone to the elements.

The other fortress to which I have already referred, that known as the "Salas de la Galiarda," was built in all probability to protect another mine, and stands on an eminence on the outer skirts of the Sierra Morena range, about 16 miles almost due west of Palazuelos. It is practically unknown. It has been visited by one or two Spanish archaeologists, who have left a few notes upon it; it has, in years gone by, been handed over to the tender mercies of treasure hunters with the usual disastrous results. It is the redenouncement of the old adjacent mine, a copper mine in this case, that has recently attracted attention to it. Here again are walls made of massive blocks, but in this instance the stones are of granite, not of sandstone. The walls were even more substantial, and are certainly more impressive than those of Palazuelos. They were provided with turrets, and they enclosed a considerable space. (Fig. 4.) The western wall is complete in length though not in height. The walls were some 4 feet thick, and had a batter of about 1 in 15. One of the entrances is still in good preservation. The jambs of the door are in place, and the well-worn threshold lies a few paces away. One of the windows or openings in the north wall of the north-west turret is quite distinguishable. It is a splayed window 31 inches in the broadest part and 4 inches in the narrowest, and commanded an extensive view over the mine. The interior of the fortress shows evidence of different and subsequent periods of construction, which are probably all Roman. The silos or water tanks are Roman, and the cistern, which shows the double arching similar in construction to those found in other cisterns in Baetica, is also Roman. The pieces of pottery, of bricks, and of tiles which I picked up were, in this case too, all Roman, and here again, whoever may have been the original builders of the walls, the Romans were the last to inhabit the castle.

Before closing this paper I should like to refer to a mine in the Sierra about 10 miles west of La Carolina, called the "Centenillo" (see fig. 1), and to some of the implements and other objects which are found within or upon the surface of Roman mines in Spain. I have been personally connected with this mine for

some years, and I owe it a debt of gratitude, because it was through this mine that I first became interested in archæology. For several years we have been making continuous efforts to get below the old Roman workings, but although we have reached a depth of nearly 650 feet from the surface, we are not below the "old men" yet. The underground workings at this mine are very extensive, but

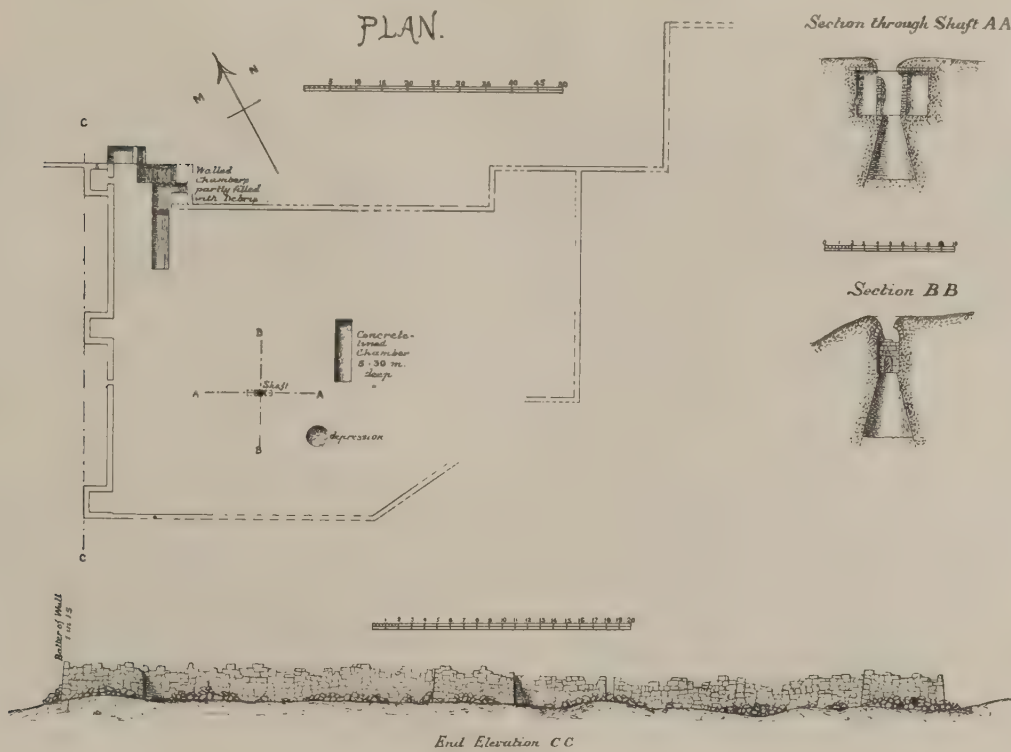


Fig. 4. Ruins of Salas de la Galiarda, near Baños, Jaén, Spain.
(The scales are in metres.)

a description of them here would be uninteresting and out of place. With regard to the evidences of Roman activity on the surface I would mention that no traces of a settlement have yet been found, nor have we been able to locate the cemetery; but we have found the spot where the Romans smelted and desilverised the ore, and where they apparently manufactured such simple articles in lead as were current in those days, viz. glands, loom-weights, cists, etc.

The accompanying illustration (fig. 5) shows some weights which were found in the Rio Tinto mines; and (fig. 6) a stone, recently discovered near the Palazuelos mine, with several forms for casting loom-weights of different sizes. The small depression in the right bottom corner may have been used for casting glands in the rough, preparatory to their being dressed into proper form with a hammer.

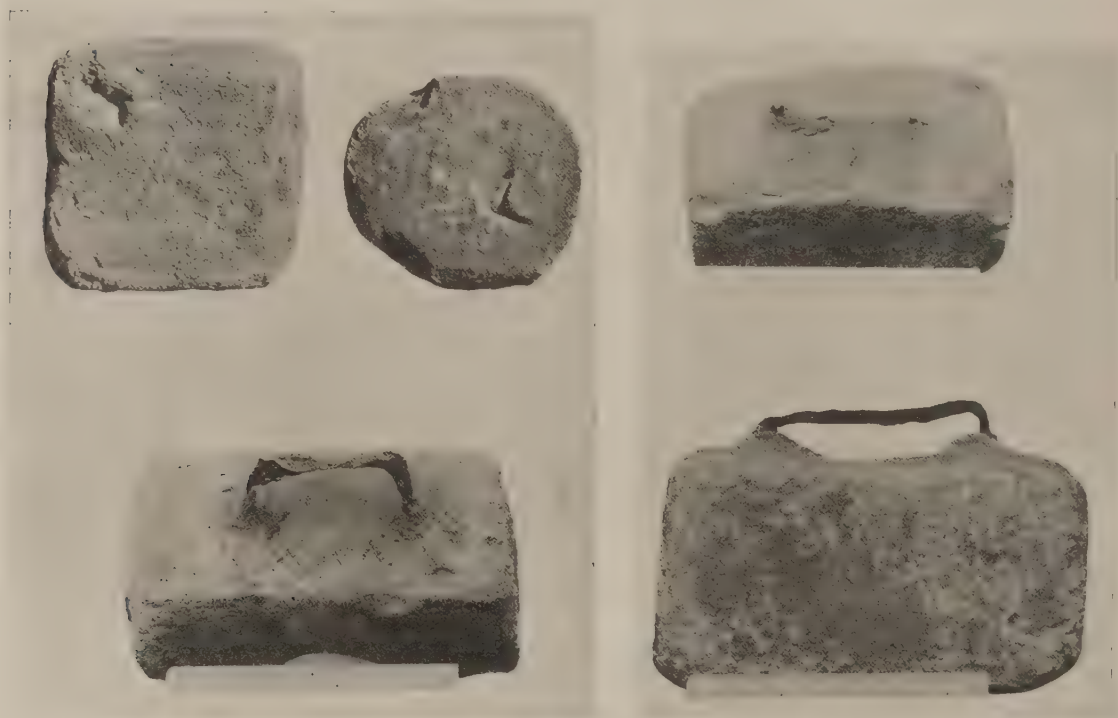


Fig. 5. Roman lead weights from the Rio Tinto mines.

There have not been many coins found at the Centenillo mines, so far as I am aware. The bronze coins range from the autonomous coins of republican times to a coin of Gratianus (375 to 383 A.D.). One find of silver coins was made in 1896. It consisted of 181 consular coins, in an excellent state of preservation, enclosed in a small earthenware jar which was hidden in a waste heap in front of an old adit. I have only been able to examine 60 coins out of the 181. They offer, so far as I

am aware, no special features of interest, and the latest of those which I have seen is dated (about) 42 B.C.

But other objects than mining implements and appurtenances are found on the sites of Roman mines. A terra-cotta figure which was found at the Centenillo mine, on the hill where the Romans had their factory, represents a mother, or mother-goddess and child, of the well-known form so often, I believe, found in tombs in Greece. Its authenticity is unquestionable, and that it is not unique, although probably very rare in Spain, is shown by another figure of a similar

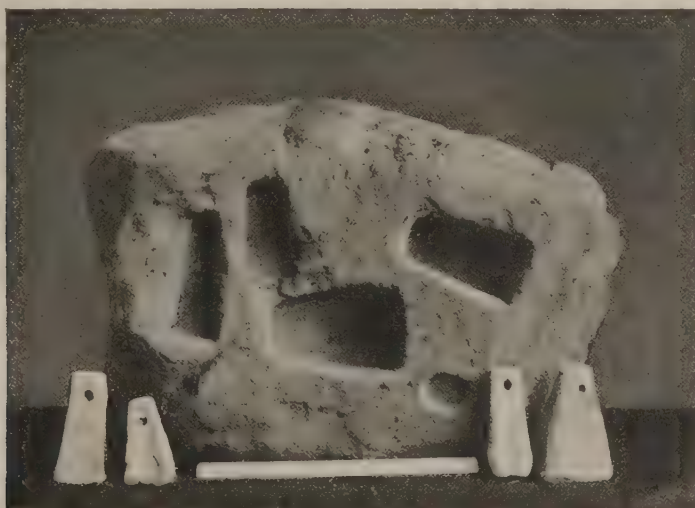


Fig. 6. Stone mould for casting lead loom-weights found in the Palazuelos mine.

form, now in the Seville Museum (fig. 7), which was found on the site of a Phocæan colony in the south of Spain. This colony subsequently became the Roman town of Nescania, near the present Antequera not far from Granada. One inscribed stone has been found at the Centenillo. (Fig. 8.) Such stones are very rarely found in the Sierra Merena. The inscription has been interpreted by Padre Fidel Fita and published in the Boletín of the Real Academia de la Historia in Madrid,^a but with all respect for him I cannot grasp his rendering of the first line. He gives it as S.SAL AUG.S (acrum) SAL (uti) Aug (ustæ). It appears

^a Tomo xxxix. Cuaderno v. Noviembre 1901, p. 455.



Fig. 7. Terra-cotta figure in the Seville Museum.

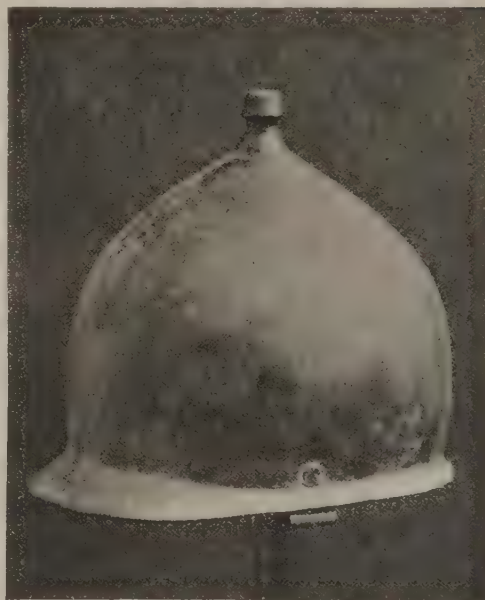


Fig. 9. Roman bronze helmet found in the Sierra Morena.

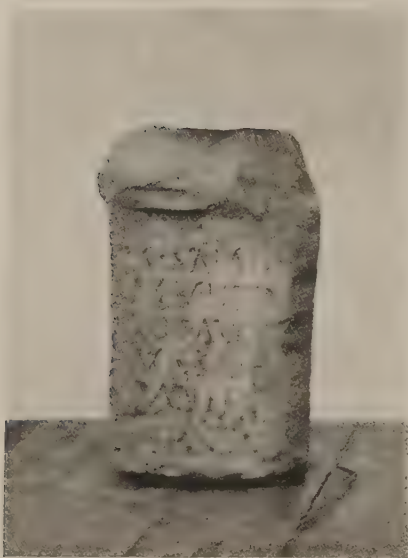


Fig. 8. Roman inscribed stone found at the Centenillo mine.



Fig. 10. Roman bronze bell found in the Sierra Morena.

to me that it should read thus: S.SALAGM. If this reading is correct, Padre Fidel Fita's interpretation is evidently wrong.^a

The very fine specimen of a bronze Roman helmet which I exhibit (fig. 9) was found in the abandoned shaft of a Roman lead mine in the Sierra Morena, not very far from Cordova. The shaft was about 100 feet deep and had never been completed. It must have remained open and exposed to the atmosphere for a very long time, because there were 3 feet of stiff black mud mixed with the debris

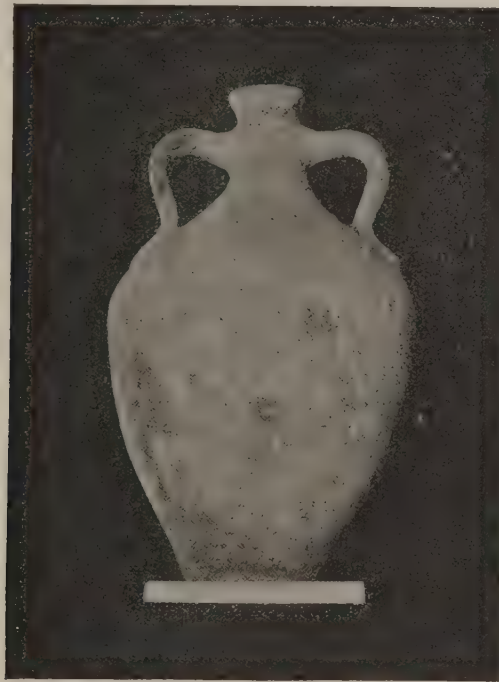


Fig. 11. Earthenware jar found in the Sierra Morena.

of leaves and sticks at the bottom of it, and it was in this deposit that the helmet, a "cooking pot," as it was described to me, a cow bell (fig. 10), which I also exhibit, and some "bones of an ox" were found. The earthenware jar shown in fig. 11 was also found in some old workings.

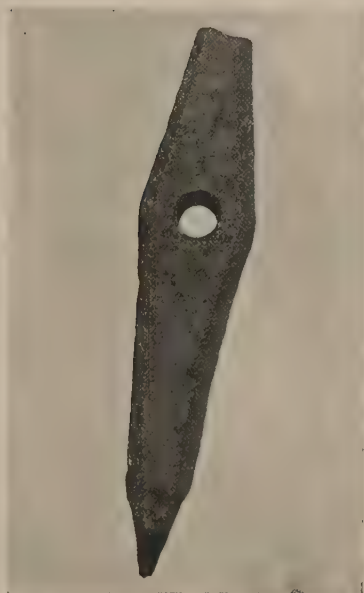
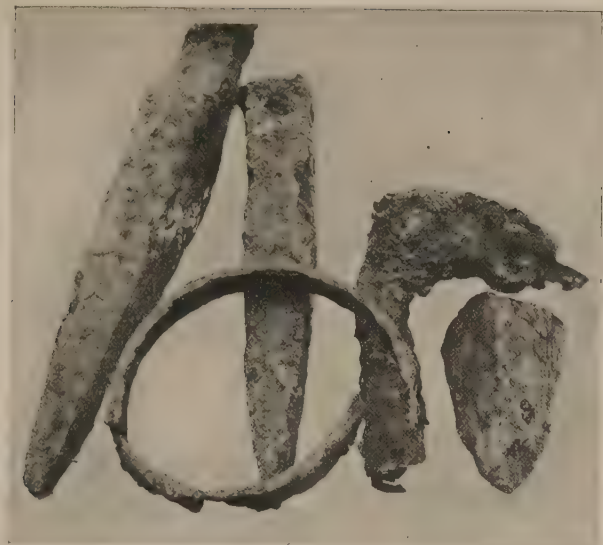
^a I would mention that within the last few days I have received a letter from a Spanish archæological friend in Madrid who has re-examined the stone, and in which he says that there can be no doubt that the word reads SALAGM.

With regard to the tools and appliances the illustrations (Plate LXX. and fig. 12) show a selection which is typical of those used by the Romans in Baetica.



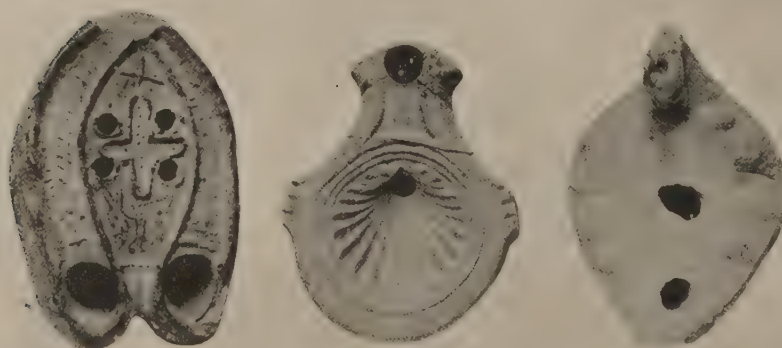
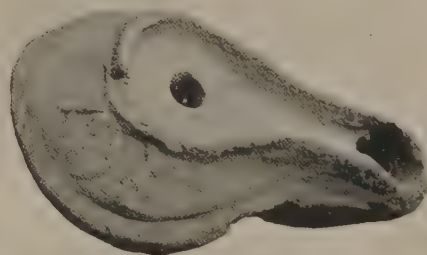
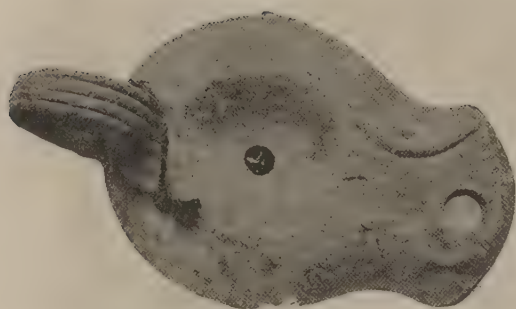
Fig. 12. Roman mining tools found in Baetica.

They have been found in various mines ranging from the Centenillo in the north to the Rio Tinto in the south, and are of much the same description as those used up to the time of the introduction of gunpowder in connection with the working



ROMAN MINING TOOLS FOUND IN BAETICA.

Published by the Society of Antiquaries of London, 1905.



EXAMPLES OF ROMAN LAMPS FOUND IN MINES IN BAETICA.

of mines. There are iron hammers still retaining part of their handles from Rio Tinto. There are iron picks of much the same form as that carried by the miner of the bas-relief.

The Romans used terra-cotta lamps of the usual forms for lighting the workings in the mines. (Plate LXXI.) The forms were modified to suit the

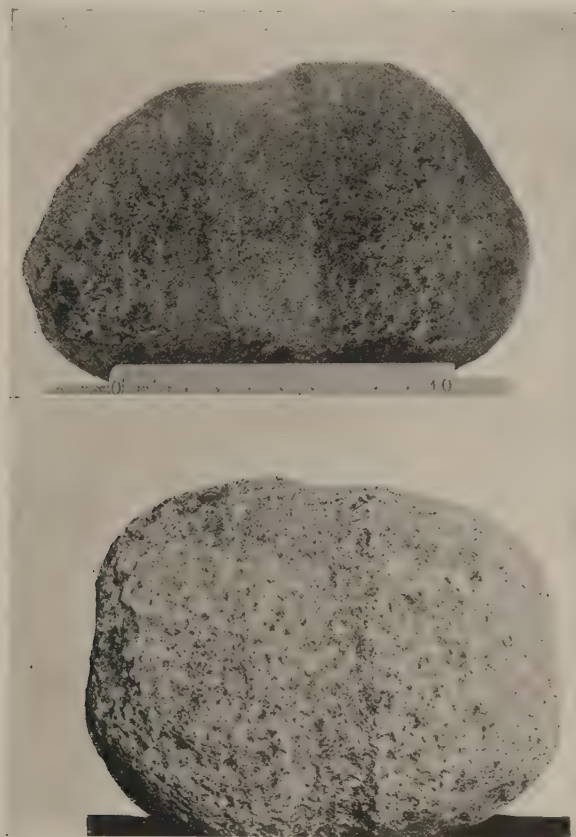


Fig. 13. Stone hammers from Roman mines in Baetica.

circumstances and to withstand rough usage. All these lamps came from mines in Baetica. Two have a cross marked on them and date probably from the later period of the Roman occupation of Spain.

I gathered together a group of over 100 stone hammers which had been used in connection with a trial made on a small copper lode in the Sierra near Cordova. A few typical examples are shown in fig. 13.

The copper vessels principally used for baling water by hand from the bottom of the Roman mines were usually provided with handles, and were probably passed from hand to hand until the spot was reached where natural drainage could be effected, or the archimedean screw or other means of lifting the water to surface could be brought into operation. One bucket has the letters S. S. punched upon it through the copper with a sharp pointed instrument. I

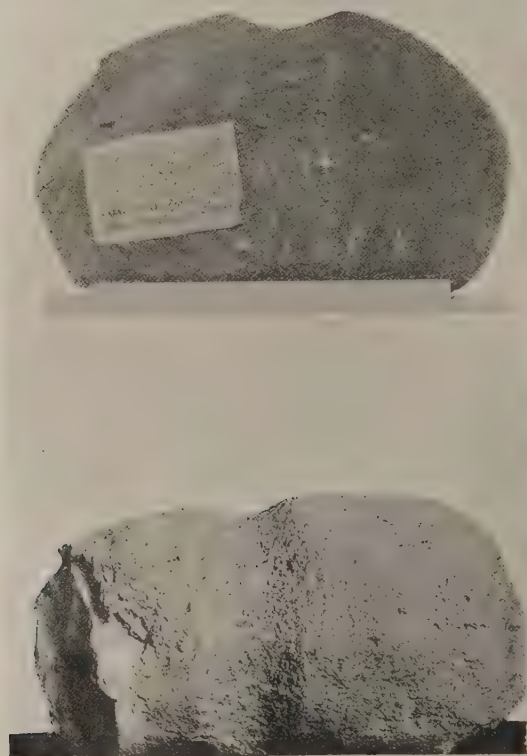


Fig. 13. Stone hammers from Roman mines in Baetica.

photographed it at a mine some miles below Cordova in the spring of last year, and on noticing the letters it occurred to me that they might possibly be the initials of the Roman company which worked the mine. I suggested this to a friend, who said that he thought that he remembered to have seen some pigs or bars of lead from the same mine with similar initials upon them.

On returning to the Centenillo mine, which is about a hundred miles away, a copper bowl was given to me, and on examining it I found that it, too, had two letters plainly stamped upon it, S. C. (Fig. 14.) On my showing the mark to an engineer who had known the mine for many years he told me that it used to be quite an ordinary occurrence to find on the factory site to which I have referred small lumps of lead, which appeared to have been cut off a rod, bearing the two letters S. C. in relief. They have unfortunately all



Fig. 14. Copper bucket found in the Centenillo mine. ($\frac{1}{3}$ linear.)

disappeared. My disappointment at not being able to obtain one was somewhat decreased by the recollection that I had seen those very two letters punched on the face of an autonomous bronze coin which had been found, I may almost say in my presence, a short time before on the same site, and on examining it closely I found the initials impressed upon it. There is no reasonable doubt, I think, that S. C. were the initials of the Roman Company that worked this mine. Perhaps some day we may be fortunate enough to learn the name of the mine itself.

I also exhibit two Roman pigs of lead from the Rio Tinto mines. Another which is on the table was dredged up in Carthagená harbour.

The bucket now shown (fig. 15) is quite perfect, and was found so late as the 22nd January last at the bottom of the Roman workings in a mine not far from Posadas, near Cordova. It appears to have been used, not for baling water by hand, but for drawing it up from below by means of a cord, and the indentations made when it struck the rock on its passage upwards, and which are all in the same horizontal plane, can readily be seen.



Fig. 15. Copper bucket found in the Posadas mine. ($\frac{1}{3}$ linear.)

XVII.—*Excavations on the site of the Roman city at Silchester, Hants, in 1903 and 1904.* By W. H. ST. JOHN HOPE, Esq., M.A., and GEORGE E. FOX, Esq., Hon. M.A. Oxon, F.S.A.

Read 9th June, 1904, and 22nd June, 1905.

THE following report of the most recent operations carried out by the Executive Committee of the Silchester Excavation Fund actually includes the reports for the two years 1903 and 1904, which were the fourteenth and fifteenth in succession of the systematic exploration of the Roman town.

Under ordinary circumstances the account of each year's discoveries would have been published separately, but it was thought better in this instance to combine the two reports, so as to enable a complete record to be given of the contents of the *Insula* examined, and especially of the important and extensive set of baths which formed the principal building in that *Insula*.

The excavations of 1903 were begun on 15th May and continued, notwithstanding the abnormally wet atmospheric conditions, until 31st October, under the efficient direction of Mr. Mill Stephenson, who also elected to act as his own foreman. A saving of over £50 was thus effected in the expenses, and if this be added to Mr. Stephenson's gratuitous supervision of the work for a period of nearly six months, it will be seen how large a debt of gratitude is owing to him, not only by his colleagues but by the Society at large.

The operations were confined to a triangular area immediately to the south-

VOL. LIX.

west of the portion of *Insula* XXXII. excavated in 1902, bounded on one side by the little brook which here traverses the site; on another by the town wall; and on the third and longest by a line extending north and south about 435 feet west of the apex of the triangle at the water gate in the wall.

This area may actually have formed part of *Insula* XXXII., but regarding the brook as a boundary we have numbered it XXXIII. (Plates LXXII. and LXXIII.)

The eastern part of this *Insula* slopes rapidly down to the brook, and like the ground on the opposite bank contained no traces of buildings. On the higher ground to the west the foundations of a number of structures were discovered.

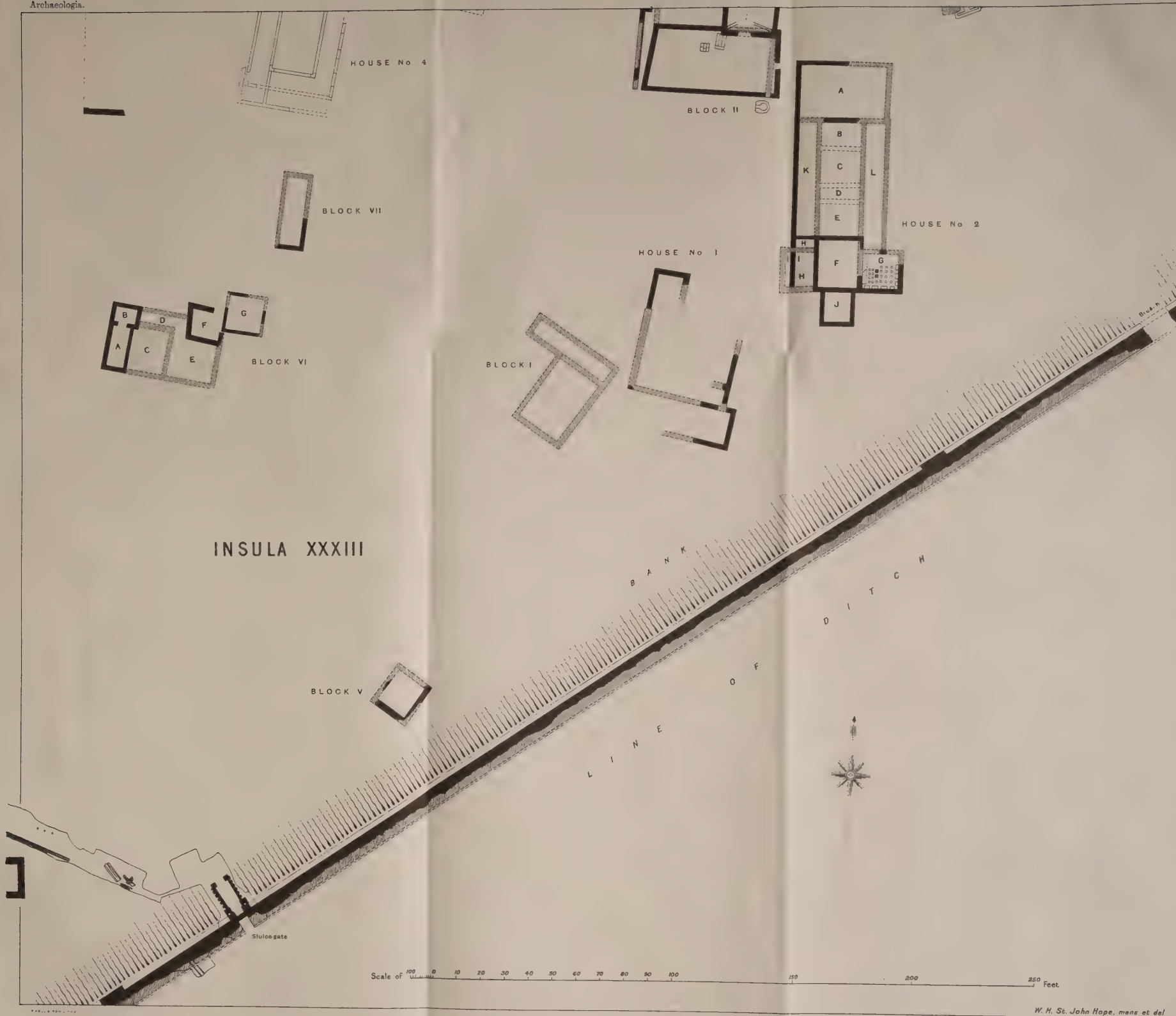
MINOR BUILDINGS IN *INSULA* XXXIII.

The southernmost of these (Block I.) consisted of an oblong chamber 29 feet long and 20 feet wide, with its axis pointing north-east and south-west, with a corridor $6\frac{1}{2}$ feet wide traversing its northern end and extending westwards for $36\frac{1}{2}$ feet. Only the gravel foundations remained, but it is of interest to note that in the case of the south wall of the corridor, the foundation was hollowed transversely as if for a wooden beam.

Immediately to the east of and almost touching Block I. were the foundations of what seems to have been a dwelling (House No. 1). It was apparently of the corridor type, but the remains were too fragmentary to enable us to recover the plan. The west wall of the house has its lowest course composed of rough blocks of ironstone; a feature of which several other instances have been met with at Silchester.

To the north-east of House No. 1 was another (House No. 2). Though represented in part by gravel foundations only, the plan is complete and affords a good example of a dwelling of the corridor type. (Plate LXXII.)

The building stood nearly north and south and consisted of a row of chambers, etc. down the middle, with a corridor on each side. At the south end each corridor terminated in a small square chamber, and another room, also of small size, has been added to the southern extremity of the house. The northern end was covered by a courtyard (A) 35 feet long and 22 feet wide. The middle division of the house was 69 feet long and $16\frac{1}{2}$ feet wide, and consisted of two small rooms (B C), a passage $4\frac{1}{2}$ feet wide (D), another small room (E), and a larger and principal



SILCHESTER.—PLAN OF SOUTHERN HALF OF INSULA XXXIII.

W. H. St. John Hope, mens et del

room (F). This last, which terminated the range southwards, had on its east side a small winter room (G) warmed by a hypocaust, and entered both from the corridor L and room F. The flues of this were chiefly in the east and south walls, and its stokehole on the north. The *pilæ* were formed partly of square and partly of circular tiles. On the west side of room F was originally a narrow annexe (H H) formed by cutting off the end of the corridor by a cross wall, but this was afterwards replaced by a small square room (I I) projecting westwards beyond the corridor, probably to serve as a latrine. The little room (J) at the south end of the house was perhaps built as an annexe to room F after the alterations on the west of the latter. If, as we may assume was the case, the house had an upper story, the staircase may have been placed on the eastern side of I I, with a vestibule at its foot in the remaining northern portion of H H. There was nothing to show how any of the rooms were paved. The walls were of the usual flint rubble, with tile or stone quoins.

Close to the north-west corner of House No. 2 were the remains of a building of somewhat indeterminate character, which may be called Block II. It seems to have consisted originally of an oblong shed or workshop 56 feet long and $24\frac{1}{2}$ feet wide, standing east and west, with a narrow annexe, only $4\frac{1}{2}$ feet across, traversing its north side. This was afterwards destroyed, and the building was otherwise altered. Both ends were rebuilt, without any regard to symmetry, and on the north-east was added a chamber measuring $19\frac{1}{2}$ feet by 23 feet, partly overriding the old north wall. West of this room a new annexe, 9 feet broad, succeeded the destroyed narrower one. The added chamber was warmed by a channelled hypocaust, with a stokehole on the south opening out of the workshop. To the west of the stokehole and partly covered by the new work were the remains of one of the long flues for dye-vats, and outside the block, to the south-east, was the base of one of the round boilers. The chamber with the hypocaust may therefore have been built to dry the fabrics dyed in the large workshop.

The relative positions of House No. 2 and Block II. suggest that the one belonged to the other.

A little distance to the north-east of House No. 2 are the remains of a rectangular building (Block III.), measuring internally 47 feet by 29 feet, which has been subdivided by thin walls or partitions into at least three chambers. The gravel foundation of the east end is curiously broadened out as regards its northern part as if to carry an external stair to an upper story. (Plate LXXIII.)

Whatever was the use or purpose of the building it was subsequently destroyed, and across one corner was built a large T-shaped furnace of somewhat

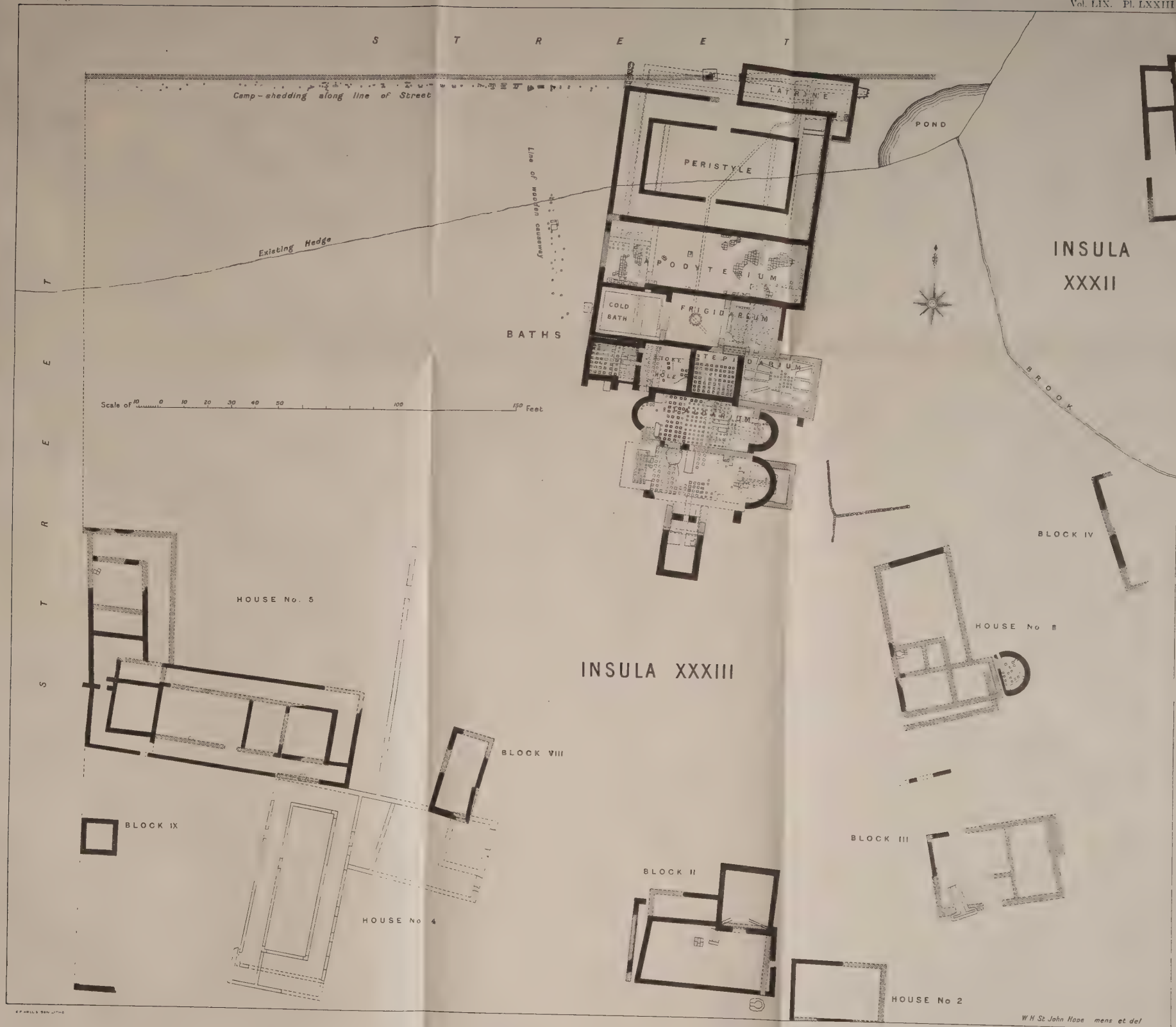
unusual character. (Fig. 1.) A furnace of this type has not before been met with at Silchester, though examples have occurred at Caerwent. In the Silchester instance the opening is 12 feet long and $28\frac{1}{2}$ inches wide, but the transverse arm, which is 9 feet long, is only from 6 to 8 inches wide. The arrangement can have had nothing to do with any metallurgical process, but could well have sustained a long boiler or vat for dyeing stuffs or some such purpose, and so would take its place with the remains of the many other furnaces found within the town.

About 23 feet to the north of Block III. but not quite parallel with its north



Fig. 1. T-shaped furnace in Block III. *Insula* XXXIII.

end were two short fragments of a well-built wall. On the east this wall terminated in or began with a squared stone. It seems to have been connected with a destroyed building some 24 feet further north, which has eventually been overlaid by what may have been a small house (House No. 3). The plan of this shows apparently a large yard placed somewhat obliquely north and south, with a L-shaped block of three rooms (one of which has been subdivided) at its southern end, with a detached chamber of semicircular form to the east. This chamber, which is separated from the rest of the block by an interval of 1 foot, was warmed by a pillared hypocaust, with *pilæ* of square tiles, with its stokehole on the north.



SILCHESTER.—PLAN OF NORTHERN HALF OF INSULA XXXIII.



1000



No floors or anything else of interest was found in the rest of the building, except a very perfect example of a circular hearth in one corner of the north-east room.

To the north-east of House No. 3 is a wall of another building (Block IV.), but in too fragmentary a state to enable anything further to be made from it.

At the beginning of the excavations of 1903 the trenches had revealed the existence of an extensive block of buildings on the side of the hill just above the brook, and close to the hedge of the grass field to the north of the area under examination. The work of uncovering this block was continued from week to week, but owing to its extent and the amount of soil and rubbish which had to be removed, it was not completed until early in September.

The result was the laying open of a very complete and interesting series of baths, which from their size and importance were without doubt the principal baths of the Roman town. (Plates LXXIII and LXXV.)

They consisted of five parallel groups of chambers, with a sixth beyond, the whole forming a solid block placed north and south and measuring about 150 feet in length and nearly 100 feet in width.

Attached to the north end of the block was a courtyard of approach of the same width as the first group of chambers. As this extended northwards into the pasture it could only be partly explored in 1903, but early in the summer of 1904 it was traced to its full extent.

Before discussing the arrangement of the baths it will be more convenient to revert to other discoveries made in 1904.

The operations of that year were begun on 13th May, and continued without interruption until 19th November, also under the direction of Mr. Mill Stephenson.

As the excavations of the preceding year (1903) were in some respects incomplete, from want of time for their full extension westwards to a definite line of street, and for the complete exploration of the courtyard of the baths, the operations of 1904 were extended in those directions.

The buildings of which remains were found, exclusive of the continuation of the baths, were not many in number. A small structure near the south wall, a group of other minor structures further north, and a fair sized house of the corridor type overlapping the lines of earlier buildings, being practically all that could be added to the contents of *Insula* XXXIII. They were all met with in a strip 200 feet wide and about 650 feet long, forming the western side of the *Insula*, and extending from the town wall on the south to the grass field on the north.

The first of these buildings (Block V.) is another example of the many small

square structures of uncertain use which occur all over the site. It measured internally about $13\frac{1}{2}$ feet by 16 feet, and stood just at the foot of the bank lining the town wall.

The group to the north-west (Block VI.) is somewhat of a puzzle. It represents an oblong block of chambers, standing roughly east and west, and measuring 50 feet in length by about 29 feet in width. (Plate LXXII.)

The western part consists of a room (A) only 7 feet wide and 17 feet long, with a doorway or opening in its north wall, with a tiled sill, into a smaller chamber (B) beyond. The west wall of this is in line with that of the long narrow room, but the east wall is set beyond it by exactly its width. The foundations of both A and B were of good flint rubble, but the rest of the building was represented by gravel foundations only. These show a room (C) to the east of A, 15 feet wide by $18\frac{1}{2}$ feet long, with a narrow corridor (D) on the north leading from B to a large room (E) which formed the eastern end of the block. At some later period, perhaps even after the destruction of the block, this room, which was 19 feet wide and $25\frac{1}{2}$ feet long, was encroached upon by a smaller and somewhat irregular chamber (F) about 12 feet square that partly overlapped it on the north; the foundations of this were of flint rubble. This chamber has in turn been destroyed to make way for another (G) which to some extent occupied its site. This latest building was evidently a wooden structure, 15 feet square, with its framework laid upon a rubble foundation only 15 inches wide.

Nothing whatever was found in or about the group of chambers just described to throw any light on their original use. They can hardly have formed a dwelling house, but may quite reasonably have served for a workshop or factory of some sort.

Immediately to the north of chamber G are the foundations of another building (Block VII.). It was in plan an oblong about $8\frac{1}{2}$ feet in width and $28\frac{1}{2}$ feet in length, standing nearly due north and south. Its purpose is a matter of conjecture.

A few yards north of Block VII. begin the flint rubble foundations of what was probably an early house of the corridor type. This building, which may be called House No. 4, stood nearly north and south. The original plan (Plate LXXIII.) shows a simple oblong 61 feet long by $17\frac{1}{2}$ feet wide, surrounded on all four sides by a corridor 8 feet wide on the north, $7\frac{1}{2}$ feet along each side, and $6\frac{1}{2}$ feet wide on the south. The foundations throughout were little more than a foot thick, and as there were no signs of subdivisions, these, as well as the framing of the house, were no doubt of wood. In the west wall of the middle block is a

break representing the sill of a doorway, in front of which were laid a number of the small bricks found in the baths; some more of the same kind of bricks were built into the quoin of the north-east corner. The outer wall of the southern corridor was largely composed of tiles, which were disposed in a somewhat symmetrical fashion suggestive of their having formed part of an open arcading. Nothing remained to show how the house was paved, or the places of the subdividing partitions.

This house evidently experienced several alterations and additions.

The first of these, judging by the thinness of the foundations, consisting in taking down the outer wall of the southern corridor, rebuilding it 6 feet further south, and continuing to join it to the western side of the main block of the outer wall of the eastern corridor. The new wall was carried $2\frac{1}{2}$ feet further west than the destroyed one, and returned northwards as far as the line of the south end of the middle block. It is here broken off, but remains of a pavement of coarse red mosaic against it point to the formation of a new room at the south-west corner of the house. To what use the larger area east of it was put there is nothing to show; it was probably roofed in.

The next alteration apparently involved the rebuilding of the outer wall of the north corridor in more substantial fashion, and continuing it eastwards for nearly 60 feet to form the north side of a large enclosure which was now attached to the eastern side of the house. This enclosure was 30 feet wide, and had in its north-east angle a lesser enclosure, measuring internally about 19 feet by 15 feet. This may have been a stable set in the corner of a large yard. Across the western end of the yard an irregular strip, 9 feet wide at one end and $12\frac{3}{4}$ feet at the other, was cut off by a cross wall. Outside the northern end of this strip the foundation of a boundary wall 2 feet thick runs northwards for a little over 100 feet, beyond which it could not be traced. A breach near the broken end may indicate a doorway there.

The next fact noticeable points to the subsequent ruin of at any rate the stable and its yard, a later structure having been so built over the north wall that it intrudes slightly into the site of the stable itself. This building (Block VIII.) was, like Block VII., a simple oblong, measuring $32\frac{1}{2}$ feet by 14 feet, with flint rubble foundations 2 feet thick. The southern half of its east side is curiously thrown out of line. Nothing was found in or about it to suggest the use of Block VIII.

Returning to House No. 4, it will be seen from the plan (Plate LXXIII.) that its north end is partly covered by another and later building, which was evidently

also originally a house of very much the same type. This building, which may be called House No. 5, stood nearly east and west, and it consisted of a middle block $72\frac{1}{2}$ feet long and $20\frac{1}{2}$ feet wide, subdivided into at least three chambers, and surrounded by a continuous corridor on both sides and across the east end. The southern corridor was $6\frac{1}{2}$ feet broad and had a thicker outer wall (of 20 inches) than the northern. It was apparently closed in, and towards its east end, where a break occurs, was the sill of a doorway or opening paved with red tile *tesserae*. The eastern corridor was 8 feet broad and partly floored with flint pitching. At some time it had been cut off from the southern corridor by a cross wall. The northern corridor was $6\frac{1}{2}$ feet broad, and as its outer wall was only 18 inches thick at base it may have supported a colonnade of dwarf wood or stone columns.

Of the subdivisions of the house not much can be said. That at the east end was a square room with traces of tile flooring in the north-west corner. Next to it was another room 14 feet wide. The rest of the block contained no signs of partition walls, but it is difficult to suppose that a length of 37 feet was undivided. A patch of red mosaic in one place suggests how this part was floored.

The first addition to the house consisted in building on a square chamber at the western end and continuing the northern corridor to give access to it. The southern corridor seems at the same time, or soon after, to have been extended westwards as far as the street which bounded the *insula* on this side, and then returned northward along the newly added chamber. It was, however, stopped short in an odd way, before reaching the north wall of the chamber, by a cross wall which had a buttress abutting on the street, and just beyond this stood a like buttress in line with the wall of the new room. Possibly this apparent continuation of the south corridor was actually a yard only. Lastly there was added to the house a further row of chambers extending northwards along the street. It consisted, apparently, of three rooms, with a corridor on the east which was returned at the north end as far as the street. This wing is joined on to the main body of the house in a very awkward fashion, and its rooms are all out of square. Immediately beyond it on the north were the remains of a large hypocaust, but in so wrecked a condition that it was quite impossible to make a plan of it.

North of House No. 5 the ground was completely devoid of buildings as far as the northern limit of the *insula*.





G.F. KELL & SON, LITH.

SILCHESTER.—BLOCK PLANS SHOWING THE GROWTH, SUGGESTED ARRANGEMENTS, AND ALTERATIONS OF THE BATHS IN INSULA XXXIII.

THE BATHS.

In describing the baths, no better way can be adopted than to begin with the earliest form of the buildings, and then to trace the successive changes they



Fig. 2. Remains of the early portico of the Baths.

have undergone; and this method, by the aid of a series of plans (Plate LXXIV.), we propose to follow.

It was a characteristic of Roman baths generally that they were rarely planned with any regard to symmetry, even when the conditions of the site were perfectly favourable, and these baths of *Calleva* were no exception to this rule.

As at first planned (Plate LXXIV. fig. 1.), the baths were approached from the north through a peristyle or courtyard, 65 feet in length from east to west, and $51\frac{1}{2}$ feet in width, surrounded by a covered ambulatory 10 feet wide. Towards the courtyard the roof of the ambulatory was no doubt supported by ranges of short stone columns standing upon a dwarf wall.^a

The entrance to the peristyle was through a doorway or opening $10\frac{1}{2}$ feet wide in the middle of its north side.

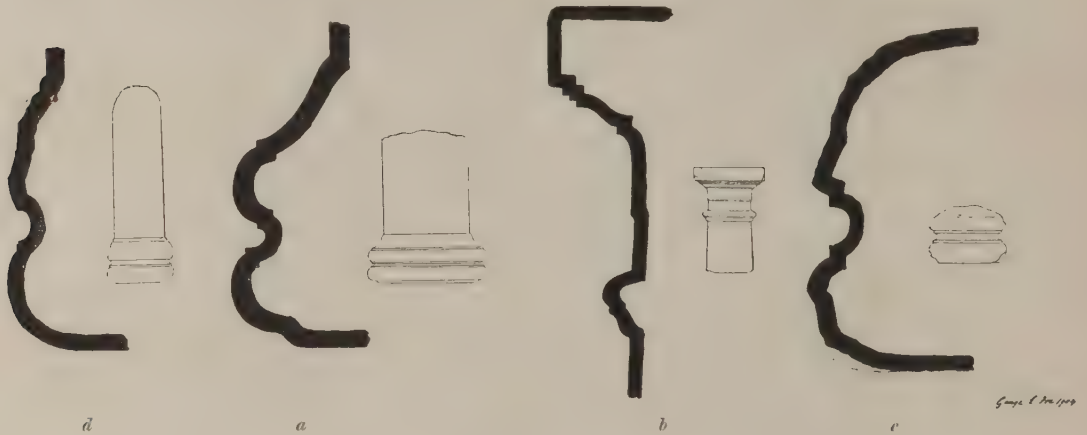


Fig. 3. Sections of architectural remains found in the Baths.

a. Base from the portico of the Baths.

b. Capital, probably from the peristyle of the Baths.

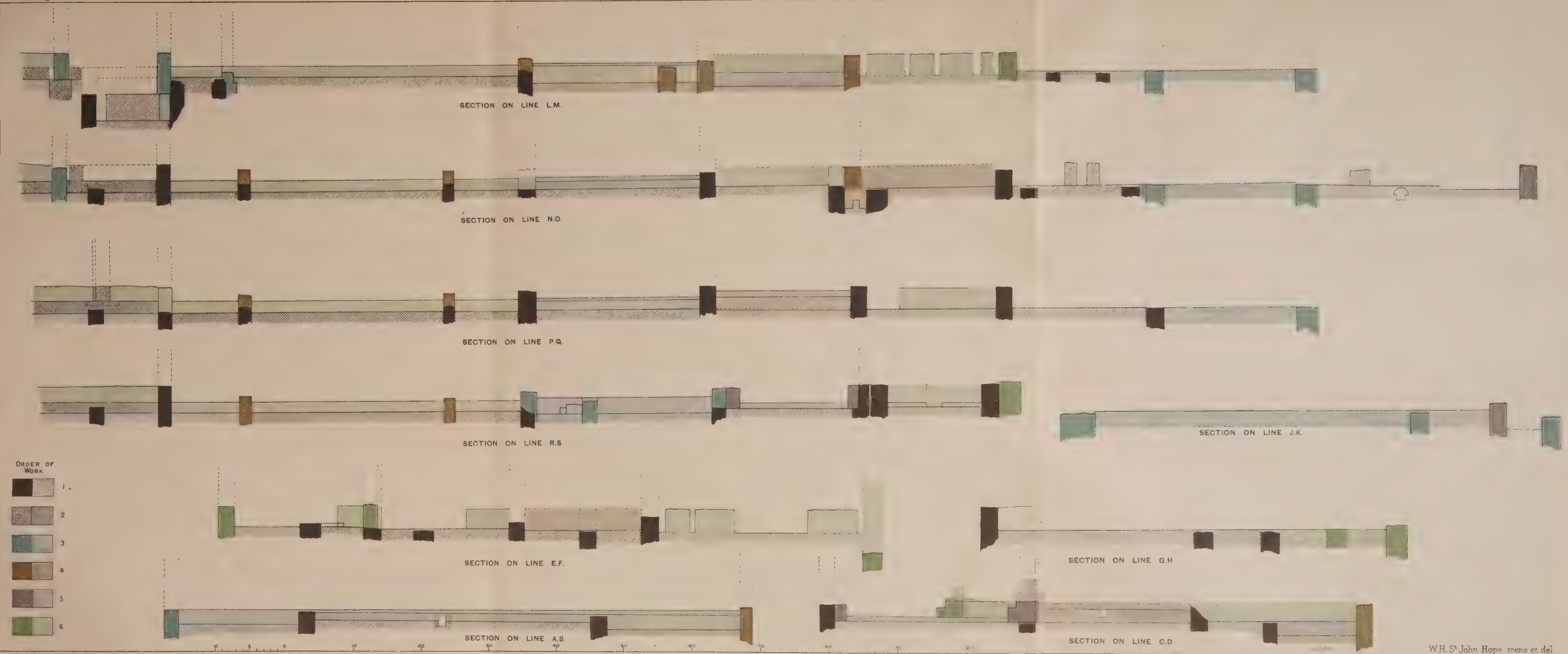
c, d. Bases found in the peristyle of the Baths.

(The sections are $\frac{1}{4}$ linear; the elevations $\frac{1}{8}$ linear).

In advance of this side, and extending its whole length, was a portico about 8 feet deep, with an open Doric colonnade in front.^b Of this colonnade we found the lower parts of three columns in place. (Fig. 2.) They were $12\frac{1}{2}$ inches in diameter, with Attic bases of good character $6\frac{3}{4}$ inches deep (see section, fig. 3, *a*); the probable height of the columns when complete was therefore 9 or 10 feet. The columns that remained stood upon a stone step 23 inches wide, and formed the

^a Fragments of these have been found in various parts of the baths. The base shown in fig. 3, *c* probably belonged to one of these columns, and the capital shown in fig. 3, *b* and fig. 8, found in the filling up of a later hypocaust, possibly formed part of a column here also.

^b One or two small fragments of capitals from this colonnade were discovered during the excavations.



SILCHESTER. SECTIONS OF THE BATHS.

western end of the range. The first one was set 13 inches from the end wall, with the intervening space partly filled with rubble walling. As the interval between the columns themselves was about 7 feet, it is evident that they were originally eight in number, but the middle opening must either have been wider than the others, or, what is more likely, was reduced to the same width by piers of masonry. The columns would thus have formed themselves into two groups of four each, with an entrance in the middle of some architectural pretensions. The architraves were probably formed of wooden beams and the roof covered with tiles.

One of the most noticeable facts in connexion with the first uncovering of the baths was the absence of all positive traces of the indispensable latrine. We have since found that it was attached to the eastern end of the newly discovered portico.

It was an oblong structure, measuring in all 19 feet from east to west and 15 feet from north to south, built up independently against the portico, with outer walls 2 feet thick. For some unknown reason it was not quite rectangular. Running round all four sides was a drain about 18 inches wide and 3 feet deep, well built of brick, over which the seats were arranged. (See Plate LXXVIII.) The drain was flushed by a stream of water which entered its western end from a watercourse extending under the whole length of the portico along its south side from the wet and marshy ground on the west of it. This watercourse was about 18 inches deep, and lined throughout with brickwork. The entrance to the latrine was in the western part of its south wall, from a small porch or lobby 7 feet long and 5 feet wide opening out of the peristyle of the baths. The outlet from the latrine was at its north-east corner into a pit about 4 feet square lined with wood, the overflow from which must have followed roughly the line of the existing stream.

The baths were entered from the courtyard to the north through a doorway 8 feet wide in the north wall.

This entrance opened into a large hall (A) 41 feet long and 24 feet wide, which served as the *apodyterium* or undressing room. It had a floor of *opus signinum* $5\frac{1}{2}$ inches thick, of white cement and broken tile. The walls, which are standing to a height of from 15 inches to $3\frac{1}{2}$ feet, are covered so far with plain white plaster. The masonry is of flint rubble and freestone blocks, with tilework for the openings. The tiles so used are broken as well as whole. In the south-west corner of the hall was a doorway $3\frac{1}{2}$ feet wide.

From the *apodyterium* (A) a doorway in its south wall gave access to the

frigidarium, or cold bath room. This consisted of a middle division E, measuring 22 feet by $19\frac{3}{4}$ feet; a western division F, entered from E by a wide opening of some 11 feet span, and measuring $26\frac{3}{4}$ feet by $18\frac{1}{4}$ feet; and a small eastern division G, which contained the cold water bath.^a This last was 8 feet wide and twice as long, with a step along the north and west walls, and in the south-west angle was a quadrant-shaped platform, perhaps for a series of steps. The low wall separating the cold bath from the rest of the *frigidarium* has been destroyed on account of its material, which consisted entirely of tiles, but the cast left by these on the later plaster shows that the bath was entered by a wide opening like that opposite. The division E was paved with small bricks, measuring about 6 inches by 3 inches by 2 inches, set on edge and arranged herring-bone wise on a bed of red cement, and the cold bath was similarly floored. The walls of E were plastered with *opus signinum* and bordered at the floor level by a quarter-round skirting of pink cement laid over the brick pavement. The western division F was no doubt treated as to both floors and walls in like manner, but later alterations have obliterated all traces of the first arrangement.^b

From a point below the middle of division E there extended in a south-easterly direction a well-built tile drain $10\frac{1}{2}$ inches wide and about the same in depth, which shelved down to a stone channel $7\frac{1}{2}$ inches wide through the wall into the drain K. The object of this is somewhat obscure, but may perhaps be explained by a similar arrangement in the *frigidarium* of the baths adjoining the station of *Cilurnum* on the Roman Wall in Northumberland.^c Here were found the fragments of a circular stone bason, about 5 feet in diameter and 17 inches deep, which had been fixed in the middle of the room, above a stone channel leading from a cistern in the wall between the *frigidarium* and the *apodyterium*. From the bason there was another channel at a lower level which served as a drain to carry off the waste water into the latrine. Now we have found at Silchester scattered about in and around the *frigidarium* the fragments of a large and shallow circular bason of Purbeck marble. When complete it must have been 5 feet in diameter, with a depth of 3 inches. (Fig. 4.) The remains of pink mortar on the vertical edge, which is also left rough, suggest that the bason was sunk in the floor, probably in the middle of the room over the drain.

^a The total length of the three divisions of the *frigidarium* was $61\frac{1}{4}$ feet.

^b There is a recess or chase in the north wall of F, 1 foot 7 inches deep and 2 feet $9\frac{1}{2}$ inches wide, the object of which is obscure, and the wall is also thickened there for some unknown reason.

^c See a paper by Mr. Sheriton Holmes, "On a Building at Cilurnum supposed to be Roman Baths," in *Archæologia Æliana*, N. S. xii. 126.



SILCHESTER.—THE BATHS: APSE, ETC. OF THE NORTHERN CALDARIUM.

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This is an interesting discovery, since such an arrangement seems to be very unusual. It can only have been intended as a kind of shower bath for bathers who preferred that to the plunge bath, and has its parallel in the Turkish bath of to-day.

The *frigidarium* must have been lighted by windows in the east and west ends of the range.

Next to the *frigidarium* southwards was a series of four chambers, L, H, I, and J. Of these, H had a wide entrance doorway from E, and there was probably another wide opening in the partition wall between H and I. They would then together

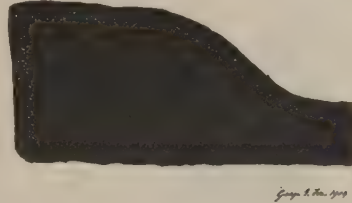


Fig. 4. Section of a Purbeck marble bason found in the *frigidarium*. ($\frac{1}{2}$ linear.)

have formed a chamber 22 feet long and $18\frac{1}{2}$ feet wide, which may have been the *tepidarium*, a room warmed either by a brazier, or, as seems to have been the case here, by a hypocaust heated from the furnace to the west. The smaller room J may have served in part as a storeplace, and was perhaps of less height than the rooms west of it, so as to allow of their being lighted by a window or windows above it in the intervening wall.

The westernmost room of the range (L) was most likely the *sudatorium* or sweating chamber. It consisted of two parts, a long and narrow inner section measuring $18\frac{1}{2}$ feet by 5 feet, and an outer section 14 feet long and 6 feet wide, with an opening $9\frac{3}{4}$ feet across between them. Under each was a pillared hypocaust worked by a wide stokehole in the western wall. Owing to the smallness of the room there would have been no difficulty in maintaining the temperature at a very considerable degree.

The next range southwards consisted of one room only, a hall (M) $31\frac{1}{2}$ feet long and $19\frac{1}{2}$ feet wide, conterminous with H, I, and J to the north of it. At its west end was a semicircular apse $10\frac{3}{4}$ feet in diameter and 6 feet deep (Plate LXXVII.), and some 7 or 8 feet of its eastern end was cut off, probably by the usual steps, to form the hot bath.* This part of the room (N) was somewhat narrower than the rest. Outside the east wall was a long and narrow stokehole for working the pillared hypocaust that heated the bath and extended under the whole of the floor; it also contained the hot-water tanks that supplied the baths.

* In all probability this and other baths in the building under notice were not tanks sunk in the floor, but formed by enclosing a portion of the floor itself by a stepped dwarf wall, as may be seen in the public baths of Pompeii. In the general destruction all traces of such baths would disappear with the floors on which they stood.

There can be no doubt that this hall served as a *caldarium* or hot chamber; and the apse probably held a circular bason (*labrum*) of cold water. This cold

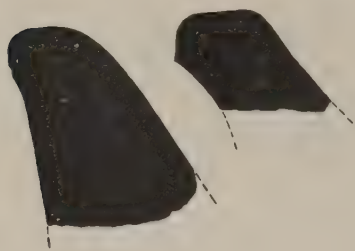


Fig. 5. Sections of fragments of two Purbeck marble basins found in the Baths. ($\frac{1}{4}$ linear.)

water was needed for pouring over the head to allay headache, or for quenching thirst and promoting the profuse perspiration induced by the heat of the room.^a Fragments of two Purbeck marble basins which may have formed part of such *labra* were found during the excavations. The sections of them (fig. 5) show that they evidently were standing vessels, and not let into the floor like the bason in the *frigidarium*.

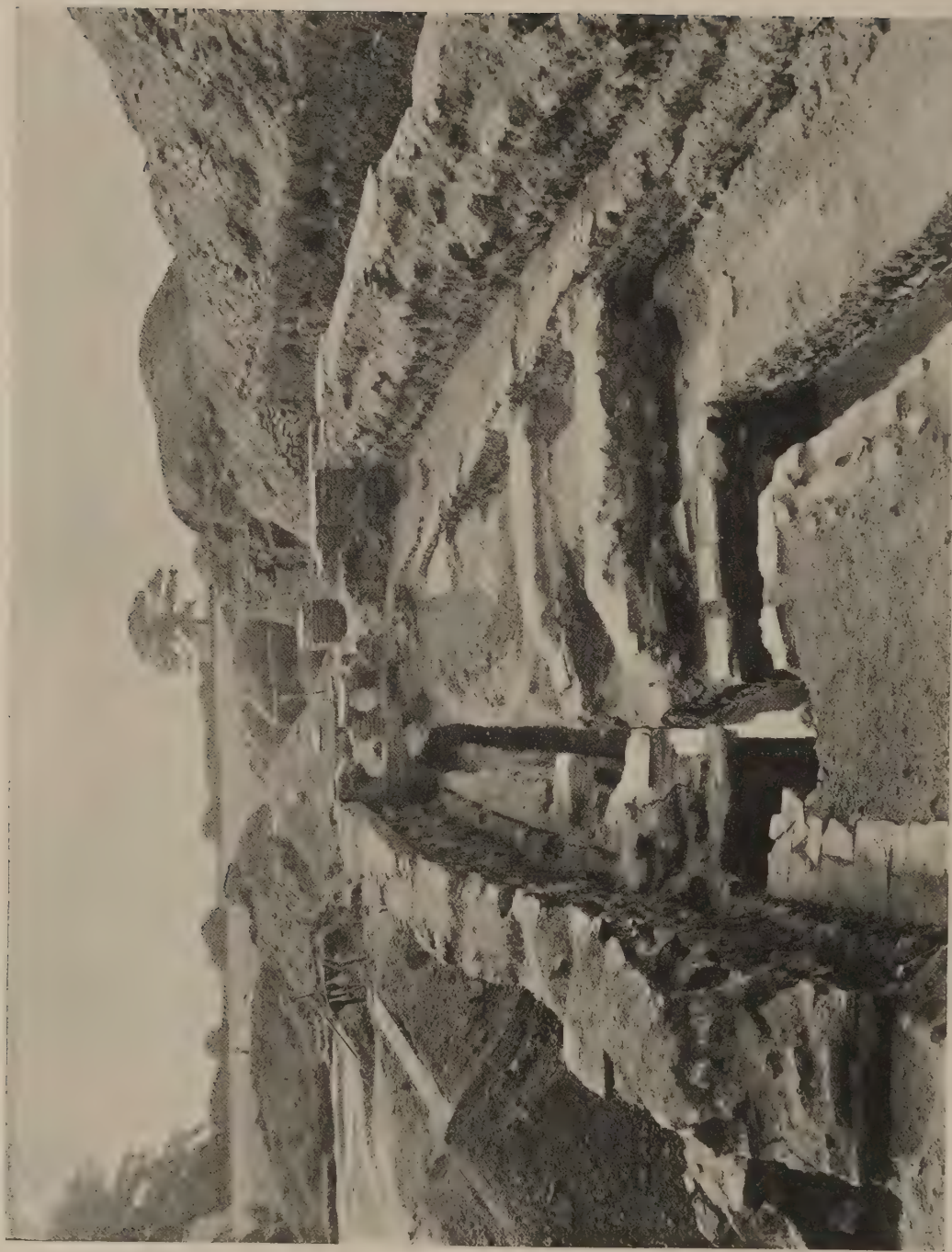
It will be seen on reference to the plan that the street which crosses the north end of the baths does so in such a way as to suggest that when the baths were first built the street itself had not been laid out. It is difficult to see otherwise why the baths were not set square with the street, and why the western end of the portico should have been allowed to encroach upon the street itself.

There is, however, clear proof that the baths are anterior to the street, since they have certainly been altered to accommodate themselves to the newly-made line.

This alteration was of a distinctly drastic character, inasmuch as it involved the destruction of the colonnaded portico, and the erection in its stead of an entrance of probably much less architectural importance. (Plate LXXIV. fig. 11.)

Of this later entrance only a few fragments were left, in the shape of the lower parts of the brick piers that flanked the entrance, and a fallen fragment of the arch, also of brick, that spanned it. From the eastern of the two piers a broad foundation extended for some way in an easterly direction, but of the corresponding wall westwards not a trace remained. It is evident, however, that the new structure traversed the whole length of the covered peristyle, but owing to the angle of the baths with regard to the street, it was so very much narrower at its western end than at the eastern, that despite the breadth of the foundation-wall it seems to have led into an open court and not to have been a covered building.

^a For the position of the *labrum* in the *caldarium* of a public bath, that of the ancient baths of Pompeii, see Daremberg and Saglio, *Dictionnaire des Antiquités Grecques et Romaines* (Paris, 1877, etc.), i. 656, figs. 756, 757. For the connexion between the cold-water cistern and the *labrum*, see the preceding illustrations, figs. 752-754, of the bath in the villa of Diomed.



SILCHESTER.—THE BATHS: THE LATRINE, LOOKING WEST.

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The formation of the new street by the usual layers of gravel necessarily entailed such a change of level that the western end of the destroyed portico became buried some 18 inches below the threshold of the structure that succeeded it. (See section, Plate LXXVI.)

This, however, does not seem at first to have involved any corresponding alteration in the level of the peristyle, which must therefore have been entered by a descending flight of steps from the street.

The making of the street was also followed by an alteration in the latrine, for which it is difficult to suggest a reason.

Although the new street wall must actually have cleared the north wall of the latrine itself it was thought desirable to make a new entrance into the latter. The original south porch of entry was accordingly destroyed; the openings into and from it walled up, and a somewhat larger porch built across the west end of the latrine, over the former eastern end of the early portico. The entrance into this porch from the peristyle was in its south wall. (Plate LXXVIII.)

To make way for this new work the western end of the latrine was taken down to the level of the top of the drain, and the porch wall carried obliquely over it, at right angles to the new street. It is also possible that the north wall of the latrine was also removed, but later changes have obscured any definite evidence of this. For the same reason there is nothing left to indicate how the internal arrangements of the latrine were remodelled to suit the change in the position of the entrance, which would not have allowed of any seats over the western portion of the drain. The watercourse that continued to flush the drain was carried through arched openings in the walls of the new porch. (See Plate LXXVIII.)

The next change to be described seems to have been coincident in date with the first extension of the baths by the addition of a large second *caldarium* at the southern end, and other minor alterations. (Plate LXXIV. fig. III.)

These alterations were clearly called for by a demand for increased accommodation, and this necessitated a corresponding enlargement of the latrine adjoining the peristyle.

To effect this the old latrine was taken down to the level of its drain, and a new building of more than double its size set up in its place.

Unlike its predecessors the enlarged latrine was a perfectly symmetrical structure, 45 feet long by 13 feet wide internally, and extending westwards from the east end of the old building as far as the entrance into the peristyle. (Plate LXXVIII.) To make way for it a corresponding length of the street wall was entirely removed, and as will be seen from the plan (Plates LXXIII.

and LXXV.) the north-west angle was allowed to encroach somewhat seriously upon the street itself. The new building also absorbed all the eastern half of the courtyard in front of the peristyle, and the eastern pier of the courtyard archway was incorporated into its western wall. (See Plate LXXXIII.)

The entrance to the enlarged latrine was in its south-east corner, from a long and narrow porch overlapping its south side as far as the peristyle, the old entrance from which was apparently again opened out.

Of the arrangements of the new latrine nothing whatever can be made out, and it can only be conjectured that they were constructed throughout of wood, the removal of which has left no trace behind. It is also equally impossible to say how the water supply was managed.

The first addition to the baths proper seems to have been made by building on to the west of the *apodyterium*, a room (B) 17 feet square, which was warmed by a hypocaust.^a (Plate LXXIV. fig. III.). The suspended floor was carried by square tile *pilæ*, and on the north side was the *præfurnium* or stoking chamber (C) $12\frac{1}{2}$ feet long and $6\frac{3}{4}$ feet wide. In the west end of this was a small compartment (D) 2 feet 9 inches wide, paved with thin stone slabs; the use of this is not clear, but it may have been an ashpit. Lying loose on the floor of the stokehole were found a number of small bricks, like those used in the first pavement of the *frigidarium*. The walls of both the hypocaust and the stokehole were covered with pink cement, and the firing passage was built of tiles. On the hypocaust floor was found a thick deposit of wood-ash and charcoal.

The room B may have been used as the *unctorium* or *elaeothesium*, where bathers were anointed with oil before dressing.

Concurrently with the building of this hypocaust the floor of the *apodyterium* was apparently raised a foot throughout with building rubbish covered by a layer of *opus signinum* 7 inches thick. The hall itself was also subdivided midway by a partition into a western chamber (Aw) paved with red mosaic and an eastern (Ae) floored with thin tiles.^b As the partition abutted upon the entrance from the courtyard this was walled up and new doorways made right and left of it. A new doorway was also probably made into the *tepidarium* from Ae, and the

^a The building of this room involved the partial walling up of the doorway in the south-west corner of the *apodyterium* (A), but it was probably made higher and served as the entrance into the new chamber.

^b The new floor had a gradual slope from west to east, and the same was the case with the original floor beneath it.

doorway from Aw raised to accommodate itself to the new level, but all traces of the doorways here have been obliterated by the destruction of the wall to below the door sills.

Apparently at the same time as or very shortly after the addition of the room west of the *apodyterium* there was built on to the south end of the baths a second large hall or *caldarium* (o). (Plate LXXIV. fig. III.) It consisted of a middle division $27\frac{3}{4}$ feet long and $18\frac{1}{2}$ feet wide, with a quadrangular alcove opening out of it at each end. That on the east was of the same width as the hall, but only 6 feet 8 inches deep, with an opening $13\frac{1}{2}$ feet wide. The western alcove had an opening only 10 feet across, and was 14 feet wide and $5\frac{1}{4}$ feet deep. The unusual thickness, 5 feet, of the foundation of its outer wall suggests that a seat was formed in it in the alcove above. The total length of the room was about 45 feet.

Outside the eastern alcove was a large furnace room (p) 16 feet long and 14 feet wide. Most of its area was taken up by two blocks of masonry, each 11 feet long and about 6 feet broad, placed one on either side of its western end. The space between served as the stokehole for the pillared hypocaust that extended under the whole of the *caldarium* o, and the blocks themselves seem also to have been in part hollow. They probably supported a tank or tanks of hot water for supplying the hot bath which no doubt filled the eastern alcove.

Unfortunately in both *caldaria* the floors have been completely destroyed, and it is therefore impossible to do otherwise than conjecture what were the probable arrangements.

Beneath the hypocaust floor of the larger *caldarium* (o) is a very singular arrangement. (Fig. 6.)

Underlying the stokehole passage in the furnace room p is a second passage only 7 inches wide covered in with flat tiles. This extends as far as the place of the stokehole arch in the western wall of o, and is then continued through the wall by a single line of overlapping *imbrex* tiles. On the western side of the wall this line becomes triple, forming a parallel series of flues 18 inches across, imbedded in the concrete floor of the hypocaust, and running the whole length of the *caldarium* into the western alcove. Here the lines of *imbrex* tiles end, but the flue is taken up as far as the west wall by a single line of broad flat roofing tiles, laid flange downwards. At the point where the *imbrex* tiles cease a second roofing tile is also laid on the south side of the others to form a hollow chamber, out of which open at a right angle two parallel flues, likewise constructed of the flat roofing tiles, and extending to the south wall of the alcove. How the flues were continued on reaching the alcove walls cannot now be ascer-

tained owing to the destruction of the walls themselves. It is also not easy to suggest an explanation of the curious arrangement described.

Where the flues begin on the east they are 11 inches below the hypocaust floor, but gradually slope upwards until at their western end they are only 6 inches under the floor. Neither the flues nor the channel from which they start have any proper bottom, and since they did not at any time contain piping they can have been only for the passage of air.



Fig. 6. Warm air conduit under the floor of the southern *caldarium*, looking west.

Now the floor which overlays the flues was covered continuously while the baths were in use with a glowing mass of charcoal and ashes, the heat of which must soon have been diffused through the concrete to the flues below. The air within them would consequently become warmed, and if we may assume that the flues turned upward on reaching the alcove walls, the air, assisted slightly perhaps

by the slight upward slope of the flues, would tend to move slowly along from the inlet in the open end of the furnace room towards the alcove, becoming gradually warmer as it reached the latter. If the flues were carried a little way up the walls and then left open they would serve to discharge into the western end of the *caldarium* a continuous current of warm air. And this would not be a mephitic compound, like that carried up the wall flues from the glowing fuel in the hypocaust, but pure air drawn from outside the building along a heated channel without traversing the hypocaust itself.^a

The next change in the plan of the baths (Plate LXXIV. fig. iv.) seems to have been effected first by building on to the eastern end of the *apodyterium* a room (q), about 19 feet square, to balance chamber b at the western end. It was also warmed by a hypocaust, worked from a narrow *præfurnium* or furnace room (r) placed on the south side. Like that (c) adjoining chamber b, this had a small recess (s) of uncertain use in one end. The furnace room entrance must have been in its eastern end, with a descending flight of steps from outside.

At the same time as the addition just described, there was built to the south of it against the cold bath room g an oblong chamber t, $11\frac{1}{2}$ feet wide and 19 feet long. The east and south walls of g were then taken down to the floor level, and the drain κ filled up and bridged over and the south wall of t continued over its site. The area of t was laid with a concrete floor 2 feet below the level of g, and probably took the place of the latter as the cold bath room; or it may have formed a swimming bath in continuation of g.

The destination of the new chamber q is less easy of explanation. It perhaps was for the use of the bath attendants as a drying room for towels and a place for stores.

Through the filling up of the drain κ it was no longer possible to dispose in that direction of the water from the shower bath in the middle of the *frigidarium* (E). A new drain was therefore constructed, running northwards under the *apodyterium* (A), and into the south alley of the peristyle.^b It was here

^a A similar arrangement was discovered at Silchester in 1897, in *Insula XVII.* Block IV. (see *Archæologia*, lvi. 109, and plate vi.), and in the Baths of *Cilurnum* (*Archæologia Æliana*, N.S. xii. 126, and plate v.).

^b The first five feet of this new drain was found to be filled to a depth of several inches with a mass of iron nails, bits of lead and glass, coins, etc. all rusted together into a solid lump like ironstone. The constituents of this must have been dropped through an opening above, probably the drain in the middle of the Purbeck marble floor-bason, and been gradually washed along the drain by the flow of water from the bason. How such a quantity of nails could be present is difficult of explanation, but they may have been swept into the bason during some repairs.

returned eastwards along the peristyle wall and discharged itself outside the building.

The new drain was built throughout of brick, and was 11 inches wide and 14 inches deep. When found it was filled up with earth and covered by a line of roofing tiles laid alternately head to head. As these are too narrow for a permanent covering it is a little difficult to see why they were so laid. The return section along the peristyle, though similarly covered in, had no properly made sides, but an outlet for it was made through the wall at its eastern end; it, too, was found filled with earth.

Another change was also made in the two rooms south of the cold bath, by taking down the division wall between I and J, making the two rooms into one,^a and raising its floor to the same level as that of the chambers to the west. This was done in a somewhat unusual way, by building the floor upon a series of tile *pilæ* after the manner of a hypocaust. Whether a hypocaust was intended or not cannot now be ascertained, but the surrounding walls are standing to such a height as to show that they were never pierced for a stokehole, or by openings communicating with the surrounding hypocausts. The suspended floor was therefore probably so built to ensure dryness.

Owing to these changes in the levels of the rooms north or south of it, it became necessary to raise also the level of the *tepidarium*. The brick pavements in E and F were accordingly taken up, except where they extended under the plaster skirting, and upon the deep red concrete in which the bricks were bedded, was laid a thick layer of rubbish, chiefly large flints, covered by a hard and strong *opus signinum* floor $5\frac{1}{2}$ inches thick. The surface of this was 16 inches above the red concrete layer. Despite the fine marble-like surface of the new *opus signinum* floor there was laid upon it, though perhaps at a later date, a pavement of fine mosaic. Of this pavement only some patches remain, against the walls, of white ivory-like limestone *tesserae*, but divers loose black *tesserae* were found, and in front of the old doorway from A a patch of black mosaic was left like a doormat. The pavement was therefore probably an arrangement in black and white. Besides covering the floor the mosaic certainly covered the walls to some height. Portions remained against the east wall and in the sides of the opening into F. These mural *tesserae* are both smaller and thinner than those used in the floor, which are $\frac{1}{2}$ inch square and 1 inch deep.

Of the use of mosaic as a wall lining not many instances have been noticed in Britain. One of the chambers in the baths of *Viroconium* (Wroxeter) was so

^a This would also no doubt have involved the raising of the eastern or outer wall of J to contain the windows to light the new room.



SILCHESTER.—THE BATHS: UPPER FLOOR, ETC. OF THE SECOND COLD BATH.



SILCHESTER.—THE BATHS: LOWER FLOOR OF THE SECOND COLD BATH.

treated, and may still be seen; and a bath in a villa excavated at Wingham, Kent, in 1881 had the walls as well as the floor covered with black and white *tesserae*.^a

The raising of the *frigidarium* level no doubt necessitated the lifting of the marble bason in the floor up to the new level. Probably at the same time the course of the drain from it was changed, so that in future it ran obliquely across the peristyle and into the latrine beyond, as shown on the plan. (Plate LXXV.)

A further alteration which was also made at this time was in connexion with the courtyard. This was now extended eastwards 8 feet to bring its end wall in line with the new room Q, and for the sake of symmetry a like extension of 8 feet was made at its western end to bring it in line with the *unctorium* (B). The walls enclosing the peristyle were also lengthened to correspond. The extended peristyle had a doorway from outside in the south-west corner.

This extension was accompanied by the taking down of the porch of the latrine, the blocking up of its doorway, and the opening out again of the closed entrance into the destroyed second porch. As may be seen from the plan this doorway came conveniently near the middle of the south wall of the new building.

The next changes in the baths are not easy to follow, but those about which there is little doubt, like the additions described above, were all by way of providing an increase of accommodation. (Plate LXXIV. fig. v.)

The first change to be noticed affects the cold bath (G T). This was now done away with by raising the floor of the deeper end T to the same level as G, and building upon the new pavement a pillared hypocaust, with a stokehole in the south wall. The mortar beds of the *pilæ* show that the bench or seat along the north and west walls of G was retained to help support the new *suspensura*, but the quadrant shaped steps in the corner were partly cut away when the south wall was removed.

In place of the bath thus destroyed it became necessary to construct a new one. This was formed in the large western annexe (F) of the *frigidarium* by the simple expedient of restoring its old level by clearing out the lately inserted floor, and replacing the old brick pavement by a new one of square and oblong tiles.^b (Plate LXXIX.) A dwarf wall with steps, built across the opening from E to F, would give a sufficient depth of water.

^a See *Archaeologia Cantiana*, xiv. 135, where an illustration of it is given.

^b The square tiles measured 8 inches each way, and the others 12 inches by 8 or 8½ inches. They were laid on a bed of very hard red cement, 3 inches thick, which was underlaid by a bed of white concrete, 9 inches thick, containing large pieces of broken brick. Beneath this again was a bed of hard white concrete of unascertained thickness. The tiles were laid carefully in bands running east and west.

Another important alteration was made in the large southern *caldarium* o, by doing away with the hot bath in its eastern end and the furnace room outside, and building upon the site of the latter a semicircular apse 17 feet in diameter. Between this apse and the *caldarium* a wide opening or archway was no doubt pierced in the eastern wall of the latter, and a buttress added for support outside to the south. By the addition of the apse and the former site of the hot bath the *caldarium* gained nearly 20 feet in length.

In place of the destroyed furnace room (P) a new one (V) was built against the middle of the south wall of o, extending at right angles from it southwards for a length of 28 feet. The new furnace room was half as large again as the old one, but its northern end was apparently taken up by the hot bath, while the hot water tanks and stokehole occupied the remaining space. In the south-east corner was a wide opening for bringing in fuel, which has subsequently been built up.

The construction of this new furnace room seems to have interfered with the drainage system for carrying off rain water from the west side of the baths. Care was accordingly taken to carry through the new *præfurnium* from side to side an arched brick drain from 17 to 21½ inches wide and about 2 feet deep. (Fig. 7.)

By the building of the second *caldarium* (o) the old *sudatorium* L became unnecessary, its area was therefore added to the *tepidarium* by taking down the wall between L and H.

There is one point in connexion with the changes just described which is difficult to understand, viz. why the cold bath should give place to a room warmed by a hypocaust. *Primâ facie* there seems no need for such a change, and one can only conjecture that it was made in view of a further alteration. Such an alteration was made, either now or shortly after, by taking down the western wall of the *apodyterium* and the division walls of the chamber beyond, and after filling up the hypocaust with dry rubbish,^a adding the area to that of the western section of the *apodyterium*. The floor of the latter was then relaid with thin red tiles, like those in the eastern section, and the new part of the room was similarly paved. The tiles were laid upon a bed of red cement, 1 inch thick.

Now it was suggested above that the room (B) west of the *apodyterium* may have served as an *unctorium*, and if this were so its destruction would necessitate

^a In this rubbish were found a number of coins, which Mr. H. A. Grueber, F.S.A., has been kind enough to examine. They extend from Vespasian to Crispus, i.e. from about A.D. 69 to 321. There is only one of Crispus, but several of Vespasian, Hadrian, and Antoninus Pius. The rest belong to the middle of the third century.



SILCHESTER.—THE BATHS: REMAINS OF THE CALDARIA.

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SILCHESTER.—THE BATHS: GENERAL VIEW LOOKING SOUTH-WEST.

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the building of another. Here then may be the reason for the new warm room (G T) east of the *frigidarium*, and its position with regard to the latter is quite a convenient one.



Fig. 7. Western arch of drain through the *præfurnium* at the south end of the Baths.

The next alteration (Plate LXXIV. fig. vi.) is also difficult to account for, inasmuch as it involved the demolition of the large *caldarium* (o) and its *præfurnium* (v). This demolition included the removal of all the outer walls of the *caldarium* down to their footings, and also of the *pilæ* of the hypocaust, which

could be mapped only by their mortar beds. (See Plate LXXX.) Certain openings in the main wall between the two *caldaria* were closed at the same time. The *præfurnium* (v) was not destroyed to the same extent as o, probably on account of the large drain which ran through it. Possibly, too, its southern part was left standing as a wood store.

Concurrently, apparently, with these, other important changes were made.

First the northern of the two *caldaria* (m) was enlarged by the removal of the hot baths and tanks at the eastern end (n), and of the *præfurnium* beneath and beyond them, and the building out of an apse (v) over the site of the latter. (Plate LXXX.) By this eastward addition the *caldarium* was extended to 41 feet in length, without reckoning the apse, which was $8\frac{1}{2}$ feet deep.

The removal of the *præfurnium*, etc. was compensated for as in the earlier case of the southern *caldarium* (o) by building out to the south over the site of the latter a new stokehole, and apparently hot baths and boilers as before. Almost all the remains of these have, however, been destroyed.

Another change effected at the same time was the building out of a large room (w), measuring 30 feet by 20 feet, to the east of the *tepidarium* (I, j). It was warmed by a composite hypocaust, worked from a stokehole in its north wall.

As the building out of this chamber blocked the stokehole of the warm room (g, r) on the site of the old cold bath, the hypocaust of this was done away with and its area filled up with dry rubbish.^a This change also involved a raising of the level, which was extended to the adjoining *frigidarium* (E). The *tesseræ* of the mosaic floor here were picked off and its bed overlaid with a layer of rubbish covered with a thin crust of *opus signinum*. The rise amounted to at least 7 inches. The area of g r henceforth probably formed part of the *frigidarium*.

A yet further change was made to the west of the *tepidarium* (L, H). First the whole of the floors and hypocausts were cleared away, next the main division (L, H) was converted into a stokehole^b for a new room (Y) with a hypocaust, built partly over and partly outside the old *sudatorium* in the west of L. (Plate LXXXII.)

Two puzzling questions arise about this new room: how was it entered and what was its use? The entrance apparently must have been in the north wall, and then only in consequence of certain alterations to the cold bath (F) north of it. These alterations had included (I) a slight reduction in the size of the bath

^a When this was removed during our excavations a large number of bone pins were found in it.

^b A new entrance from without was made into this in its south-west corner.



SILCHESTER.—THE BATHS: GENERAL VIEW LOOKING NORTH-EAST.

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SILCHESTER.—THE BATHS: GENERAL VIEW LOOKING SOUTH.

Published by the Society of Antiquaries of London, 1905.

itself by building a broad ledge all round it, and the raising of its bottom 7 inches," and (2) a later and further reduction of it by building a wall across it, filling up the part east of this with dry rubbish and adding its area to that of the *frigidarium* (E). (Plates LXXIX. and LXXXII.) There would not then have been any difficulty in making an entrance into γ from this newly absorbed section through the doubly thick wall that separated it from the cold bath.

The room γ , from its somewhat isolated position, could hardly have been one of those for the use of bathers, and not improbably it was a drying room for the use of the attendants. This suggestion is borne out by the fact that another chamber which we have previously assigned to such purpose, that (q) to the east of the *apodyteria* (Aw and AE), was added about this time to the eastern *apodyterium* by taking down all its division walls and filling up with rubbish the sites of q, r, and s. The new *apodyterium* (AE, q) was then newly paved throughout with thick red tiles ($11\frac{1}{2}$ inches by 15 inches). (Plate LXXXIII.)

By the changes above described the *tepidarium* now consisted only of this reduced area (γ), the new room (w) was therefore no doubt regarded as an addition to it; and it also probably served as the *unctorium* in place of the chamber (B), which had been lately added to the *apodyterium* (Aw).

Concurrently with these last changes must be included the raising of the peristyle to the level of the street. This change, which amounted to about 20 inches, seems to have involved a partial reconstruction of the dwarf wall towards the court. As there was recovered from the filling-in of q,^b above described, the upper part of a dwarf column of good character (fig. 8 and fig. 3, b), such as probably belonged to the early colonnade of the ambulatory of the peristyle, and other fragments of similar character have been found, it seems probable that in the later reconstruction the supports of the ambulatory roof were of brick or timber, which have left no trace behind them. The raising of the level of the peristyle also necessitated the raising of the floor of the latrine, the making of a new and wider entrance in its south wall in the place of that described above, and other changes in the latrine itself. Certain holes through the west end of the latrine belong to these alterations. One of these is a roughly made opening formed

^a The bath was drained by a lead pipe going through the west wall, the outlet of which is shown in fig. 12. In the mouth of the pipe were found a number of coins, in various stages of preservation, which have been identified by Mr. H. A. Grueber, F.S.A., as extending from Antoninus Pius to Carausius, i.e. from A.D. 138 to 293.

^b The fragment of an altar shown in Fig. 8 was also found in this filling in: it is unfortunately uninscribed. It had evidently been broken in two and then exposed to the action of fire, which had scorched the stone above and below the fracture, but on opposite sides.

apparently by tearing out the inlet of a new drain. This was about 2 feet above the level of the older drain, and placed close to the south wall of the latrine. Its outlet was through a well-made archway of brick, 26 inches wide and 39½ inches high, inserted in the opposite corner of the building, almost immediately over the exit of the older drain. (Fig. 9 and Plate LXXXIV.)

A little above the top of the hole just described are two others, one 21 inches, the other about a foot wide, roughly formed through a mass of brickwork.



Fig. 8. Architectural remains found in the Baths.

(Plate LXXXIV.) As their sills are 7 or 8 inches beneath the level of the courtyard they may have been made as inlets for surface drainage.

Before leaving the baths a certain number of interesting points remain to be noted.

One of these is the massive block of foundation (x) in the south-east corner of L, H. It was evidently constructed at the same time as the conversion of the latter



SILCHESTER.—THE BATHS: THE LATRINE, LOOKING EAST.

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into a furnace room, and, as the plan shows, does not extend quite up to the north wall of this. Owing to the complete destruction of the superstructure it is difficult to say for what purpose it can have been built. It may have been screened round to form the landing of an entrance from I, J, to a doorway on the south opening into the *caldarium* (M), as suggested in Plate LXXIV. fig. VI.



Fig. 9. Archway in the eastern end of the latrine.

Another point to be noted is the height of the hypocausts in the *caldaria*. (Plates LXXVI. and LXXX.) Though the *pilæ* nowhere remained to their full

height, in many cases they were standing sufficiently high, upwards of 3 feet, to show that they were of greater elevation than in the hypocausts of domestic buildings. This was no doubt in order to obtain a greater volume of hot air for the warming of the large chambers over them. A like feature has been observed in the baths of *Viroconium* and of one or more of the northern stations.

Of the superstructure of the baths little can be said, since it has entirely disappeared, but judging from analogy it may safely be inferred that the walls of the *caldaria* were jacketed with box-shaped flue tiles, pinned here and there to the masonry by T-shaped iron cramps, and covered by a thick coating of plaster



Fig. 10. Fallen fragment of wall with remains of a window.

with decorative colouring. Fragments of such flue tiles were plentiful enough in the rubbish, and a certain number of the iron cramps were also turned up.

Owing to the loss of the superstructure several other points must remain unsolved, such as the exact position and dimensions of the doorways and windows, the character of the floors, and the nature of the ceilings and roofing.

The sites of a few doorways have been noted on the plan, and it is of course possible to infer the positions of some of the windows. Just outside the south-west angle of the southern *caldarium* (o) a large block of fallen masonry about

7½ feet wide actually retained one jamb and traces of the head of a square-headed window (fig. 10). The width of the opening could not definitely be fixed, but as the fragment evidently formed part of the western alcove of the *caldarium*, and had a vertical face along one side, the opening was probably 3½ feet. It was crossed by a horizontal lintel of brickwork 26 inches deep, over which a course of bricks laid herringbonewise apparently served the purpose of a relieving arch. The jambs were splayed to a small angle, but owing to the fracture of the external edge, it is uncertain how the glazed frame was fixed.^a As the jamb only remains for 3 feet 5¾ inches, the height of the opening cannot be recovered.^b

A further point is the question how the different rooms were covered in. From analogy with foreign examples, and even of instances in our own country, as at *Viroconium* (Wroxeter) and the great bath at Bath, we should have expected at least the main divisions to have been covered with barrel vaults. But no fragments of such were found during the excavations, and the walls do not seem either to have been strong enough to carry them, or to have been furnished with sufficient abutments or buttresses. The baths were therefore more probably covered in some such manner as that recommended by Vitruvius, namely by ceilings formed of large flat tiles covered with plaster, attached to the under side of wooden beams or rafters.^c Any fallen fragments of such ceilings would be difficult to distinguish amongst the wreckage of walls and hypocausts. The ceilings in any case were protected by outer roofs covered with tiles.

It only remains to add that the walls of the baths were certainly plastered externally. Considerable portions remained on the apses of both *caldaria* (Plate LXXX.), as well as on the outer face of the fallen fragment with the window jamb.

^a Portions of several large panes of window glass were found in the deep excavation to the west of the cold bath.

^b In the figure (10) the jamb is the side nearest to and parallel with the scale.

^c "Concamerationes vero, si ex structura factæ fuerint, erunt utiliores. Sin autem contignationes fuerint, figlinum opus subjiçatur. Sed hoc ita erit faciendum. Regulæ ferreæ aut arcus fiant, eæque uncinis ferreis ad contignationem suspendantur quam creberrimis, eæque regulæ sive arcus ita disponantur, ut tegulæ sine marginibus sedere in duabus invehique possint, et ita totæ concamerationes in ferro nitentes sint perfectæ, earumque camerarum superiora coagmenta ex argilla cum capillo subacta liniantur. Inferior autem pars quæ ad pavimentum spectat, primum testa cum calce trullisetur: deinde opere albario sive tectoria poliatur; eæque cameræ in caldariis si duplices factæ fuerint, meliorem habebunt usum. Non enim a vapore humor corrumpere poterit materiem contignationis sed inter duas cameras vagabitur." M. Vitruvius Pollio, *De Architectura*, lib. v. cap. x.

From these details of the baths we may pass to the consideration of other discoveries connected with their investigation.

The following up of the drain that flushed the first latrine showed that it passed under the western end of the portico through a brick archway 19 inches wide. Westward of this the drain was open. In tracing it further there was found in line with the later western wall of the peristyle, first, against the wall, a block of brickwork 23 inches wide and of 21 inches projection, next an interval



Fig. 11. Masonry built on piles.

of 37 inches, then a second block of brickwork 2 feet square with a rough backing of rubble beyond. (Fig. 11.) Further examination showed that both blocks were supported upon a foundation of stout wooden piles^a from 9 to 10 inches in diameter, and cut off square at the top. Other piles stood clear of and between

^a Mr. Clement Reid pronounces these to be of alder, and not oak.

the blocks, but leaving room between them for the drain. The blocks apparently formed the piers of an arch that once spanned the drain; if so it must have been one of quite imposing dimensions, since its width was 37 inches. The object of this projection apparently was to carry over the drain the wall that formed the southern boundary of the street.

A further endeavour to trace the drain westward led to other discoveries. First it was found that a second drain, the sides of which were formed of wood planking, traversed the western end of the peristyle and joined the other at its north-west angle. Next there came to light in a westerly direction a further series of piles. These were followed up along the bottom of a wide trench nearly 4 feet deep for some 220 feet, where they stopped against a street running southwards. The trench was carried across this and a few more piles found beyond, but here we had reached the limit of our excavations.

The piles in question are for the most part decayed to mere stumps, which gradually diminish in size and in number as they extend westwards. Towards the east they are more perfect and are found to group themselves into series which are associated with the remains of horizontal and longitudinal timbers. The difference of condition can be accounted for by the fact that owing to a gradual rise of the ground westwards, the piles in that direction were evidently less constantly under water than those nearer the baths, and so perished more rapidly.

The reference to water leads us to the consideration of the interesting question why these piles should be found here at all, so close to the middle of the town.

It had been noticed during the excavations of 1901, in *Insula XXVII.*, to the north of the modern roadway, that as our trenches approached the road they passed into and through a deep deposit of black earth. This same deposit was met with the following year in *Insulæ XXVIII.* and *XXIX.*, and extended southwards all along the margin of the brook. The excavations of 1903 showed the same black earth along the west side of the brook, and it extended in a northerly direction so as to surround the whole block of the baths, which seemed to have been built in it. From the baths it extended northwards up to the street that formed the northern boundary of *Insula XXXIII.*, and gradually died out westwards as it approached the street on that side.

Now it will be seen on reference to the very accurate survey of the Roman town and its immediate surroundings, which was made and published by the late

Mr. Henry Maclauchlan in 1851,^a that he is careful to show a decided valley extending along the course of the brook and in the various directions described above. It is this valley which is filled with the deposit of black earth. Its depth is considerable, and at the south end of the baths was nearly 6 feet. It is also of the same homogeneous character throughout.

Since it is out of the question that the baths can have been sunk in such a deposit, it must be of more recent formation, but how could it have been formed?

The nature of the black earth is so exactly like the mud which forms at the bottom of a pond long stagnant as to suggest that it originated in the same way.

The outlet for the brook through the town wall was of no great size, and after the place ceased to be inhabited could easily have become choked. The water would then have gradually risen until it filled all the valley northwards, its depth being controlled by the height of the town wall, which served as an efficient dam.

To the long-continued existence of such a deep and extensive pond, which there is little doubt was thus formed, is due the deposit of black earth.

It is evident, from the fact that the stumps of the piles are found deep down in the deposit, that at the time they were driven in this part of the site must have been more or less of a swamp, caused by the presence of the strong springs that once supplied the baths and now form the brook. It will also be seen from the plan that they are arranged in a straight line parallel with and fringing the southern edge of a wall that originally lined the street, in continuation of that forming the northern end of the baths.

Now it has already been shown that this street is later in date than the baths, the northern end of which was altered on account of it, and that its level was from the first somewhat higher. Since it also clearly traversed the swampy ground just referred to, there cannot be any reasonable doubt that the piling and planking are the remains of the camp-shedding which formed part of its construction to uphold the wall that bounded it on the south.

That the swamp became in wet seasons a shallow pool is demonstrated by another interesting discovery.

Owing to the presence during 1903 of the huge spoil heaps caused by the excavation of the baths, it was impossible to follow up the outlet of the cold bath. As soon, however, as the baths were again covered up last year we were able to follow this outlet, with this result. The lead pipe that passed through the wall

^a *Archæological Journal*, viii. 227.

from the bottom of the bath discharged the water on to a tile bed, from whence it flowed to a lower level. (Fig. 12.)



Fig. 12. Outlet of the cold bath.

In the deep cutting through the black earth which was necessitated by this investigation a few more piles came to light, and these were eventually followed northwards as far as the hedge. Time did not allow of their being traced further

north, but there can be little doubt that they continued up to the line of camp-shedding. As moreover they stand clear of the baths it seems as if a suggestion for which we are indebted to Mr. Clement Reid is a likely explanation, that the piles are the remnant of a series which carried a wooden causeway across the swamp.

The rest of our report need not take us long.

As in the year 1902, there was an almost entire absence of pits or wells, and the few sporadic finds in metal or bone do not call for any special note. A pretty gold earring from the baths and a broken gold-headed pin may be mentioned.



Fig. 13. Circular stamp with title of the Emperor Nero. ($\frac{1}{2}$.)

A circular stamp found on a fragment of brick, in the cesspit to the east of the latrine, is of some interest. (Fig. 13.)

It has in the middle what looks like a rose, circumscribed :

NER · CL · CÆ · AVG · GER

i.e. Nero Claudius Cæsar Augustus Germanicus.

Mr. Haverfield has pointed out that since this was a title of the Emperor Nero, between A.D. 54 and 68, this fragment is the earliest dated relic, apart from coins, which has yet been found on the site of *Calleva*.

PLANT-REMAINS.

The examination of the contents of pits, etc. for seeds and other vegetable remains has continued under Mr. Lyell's patient research to yield interesting results, and we are again indebted to Mr. Clement Reid, F.R.S., for the following valuable note upon them :

" The neighbourhood of the baths has yielded food-plants in exceptionally large numbers, the most interesting finds being seeds of the opium-poppy (*Papaver somniferum*), stones of the medlar (*Pyrus germanica*), and stones of a large plum, scarcely distinguishable from the Orleans plum of the present day. We have also the wild radish (*Raphanus Raphanistrum*).

Seeds of the opium-poppy occur in no less than five of the samples collected by Mr. Lyell in 1904, though none had been found previously in any of the rubbish-pits connected with private houses. The cause of this peculiar distribution is not clear; for the poppy being represented by ripe seeds and not by unripe capsules, there is nothing to suggest an opium-den or apothecary's shop. Poppy seeds are extensively used at the present day for their oil, and even as a substitute for olive oil; but the Silchester seeds have not been crushed. Mr. Fox points out that Roman bread, at any rate of a common kind, was sprinkled with poppy seeds.^a The seeds are distinctly smaller than my Indian specimens, and may well have been grown in Britain. Until a capsule has been found it cannot be said whether the plant agrees most closely with the form cultivated by the Swiss lake-dwellers, which has a capsule surmounted by eight stigmas, or with the opium-poppy now cultivated, which has ten or twelve stigmas.

The mode of occurrence of these seeds, as well as of some of the umbelliferous plants, such as the coriander and parsley, suggest that such seeds may have been used whole, in much the same way that we now use carraway, seeds of which have not yet been found in Roman Silchester.

The only previous record of the opium-poppy in early times in Britain was from Cowden Glen, in Renfrewshire, from which place two seeds were sent to me several years ago. I have never been able satisfactorily to date the deposit in which they were found.^b

The medlar, though cultivated by the Romans, was not previously known to

^a See Pliny's *Natural History*, book xix. chap. 53.

^b See Reid's *Origin of the British Flora*, 63.

have been introduced by them into Britain. It is very rare at Silchester, and its hard stones are only about half the length of the cultivated ones in my collection. Mr. August Kappel, of the Linnean Society, however, informs me that in Germany a small medlar, only as large as a cherry, is also cultivated. This would probably yield a stone about the size of that found at Silchester; but so far I have been unable to procure specimens for comparison.

A single specimen of the stone of a large plum was found some years since, and now a sufficient number has been obtained to allow us to say that it is apparently a variety closely allied to the Orleans plum. The stone is the same size and shape, but is a little sharper and flattened at the tip. Among some plums of ancient cultivation now grown in Cornwall and given to me by Mr. Tellam, one known as the "black plum" has also a stone closely resembling that from Silchester. We have now proved that the sloe, bullace, damson, and a plum like the Orleans plum were quite distinct as far back as Roman times, and that this period of 1,600 years has been insufficient to cause any further divergence, though botanists often refer these forms to varieties of one species.

Though bullace stones occur in considerable quantities, hitherto all seem to have been referable to the common hedge-row or wild form. One stone found last year is, however, much larger, more globose, and blunter; it is in every respect identical with the form of bullace still cultivated in cottage gardens in Wales.

The occurrence of a second stone of the Portugal laurel may also be recorded. Neither of the specimens is particularly well preserved; but the form is so peculiar that I do not think there can be any doubt as to their belonging to this evergreen.

The parsnip has already been recorded, but the gradual accumulation of more material shows that the Roman form differs both from the wild plant and from the common variety now in cultivation. I cannot yet match the elongated narrow-winged fruit found in Roman Silchester.

The excavations of the year 1903 yielded very few novelties, and those of little interest. They were:

<i>Stellaria aquatica</i> , Scop.	<i>Carex remota</i> ? L.
<i>Carex muricata</i> , L.	— <i>panicea</i> ? L.
— <i>ovalis</i> ? Good.	

These are common marsh plants, such as one would expect on swampy ground."

ANIMAL REMAINS.

The bones obtained during the exploration at Silchester in 1904 from the latrine of the public baths and its drain are for the most part of domestic kinds: horse, sheep or goat, pig, cat, dogs of several sizes, hare, small fowl, to which must be added pheasant, wild duck, jay, and water vole. Of the smaller bones collected from siftings Mr. Newton writes as follows:

“The mammalian bones are nearly all sesamoid bones and epiphyses together with small phalanges, and seem to have belonged to small and very young ungulate animals; some of the ungual phalanges evidently belonged to a very young pig. None of the other remains calls for any special remarks, but although they are very imperfect the following forms have been recognised with more or less certainty.

Ox (<i>Bos longifrons</i> ?).	Eel (<i>Anguilla vulgaris</i>).
Roebuck? (<i>Capreolus caprea</i> ?).	Perch? (<i>Perca fluviatilis</i> ?).
Pig (<i>Sus scrofa</i>).	Pike? (<i>Esox lucius</i> ?).
Shrew (<i>Sorex vulgaris</i> ?).	Cyprinoid fish, probably Dace
Thrush (<i>Turdus iliacus</i> ?).	(<i>Leuciscus</i> sp).
Frog (<i>Rana</i> sp).	Common Mussel (<i>Mytilus edulis</i>).”

With the above were several skull bones of very young babies. It would be highly speculative to account for the presence of these latter in the drains of a public bath.

It only remains to note that Plate LXXXIII. and figs. 7 and 12 are from photographs by Mr. J. B. P. Karslake, F.S.A.; the other plates and figs. 1, 2, 6, and 8-11 are from photographs by Messrs. Victor White and Co. of Reading. The plans and sections and the remaining illustrations are by members of the Excavation Committee.

The accompanying block-plan (fig. 14) shows the progress made in the excavation of the site down to the end of 1904.

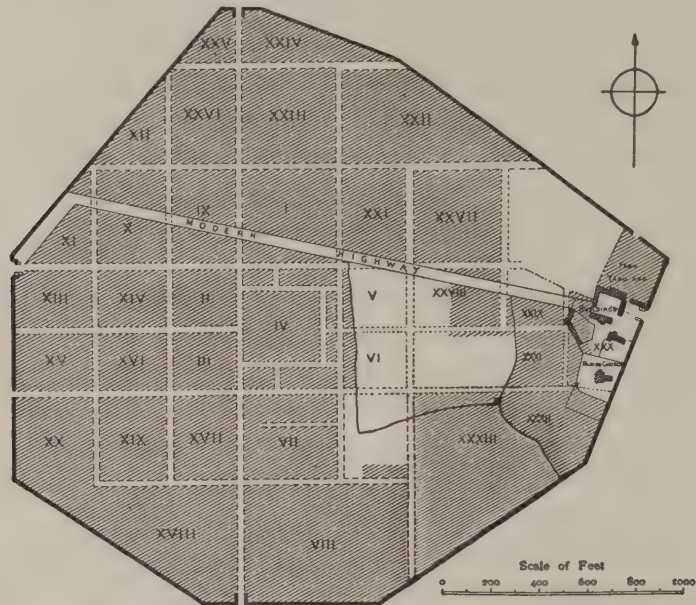


Fig. 14. Block-plan of Silchester, showing portions excavated down to the end of 1904.

XVIII.—*On the Wall Paintings in All Saints' Church, Friskney, Lincolnshire. By the Rev. HENRY JOHN CHEALES, M.A., late Vicar of Friskney, and Rural Dean of Candleshoe.*

Read 16th March, 1905.

CONCLUDING NOTICE.

THE wall paintings in Friskney church, upon which this is a concluding paper, have already formed the subject of former communications to the Society in 1881, 1883, 1884, 1886, and 1891, which have been duly printed in *Archaeologia*.^a The subjects of the paintings have now all been ascertained, and appear to be as follows :

North clerestory (from west to east) :

1. King David and the Prophets ;
2. The Annunciation ;
3. The Nativity ;
4. The Resurrection ;
5. The Ascension ;
6. The Assumption.

South clerestory (from west to east) :

1. The Pope and the Doctors of the Church ;
2. The Gathering of the Manna ;
3. The Last Supper ;
4. The King doing homage to the Host ;
5. The Irreverent Woman ;
6. The Jews stabbing the Host.

The last time I had the honour of bringing these paintings to the notice of the Society, in 1893, tracings of the last three of the southern series were exhibited, and afterwards copies of them published in *Archaeologia*.^b

There remained then only one out of the twelve paintings on the clerestory to be examined, namely No. 2 in the subjects of the north wall. These relate, as

^a Vols. xlviii. 270-280 ; l. 281-286 ; and liii. 427-432.

^b Vol. liii. plates xxix. xxx. and xxxi.

I have before explained, to the presence of Christ in the flesh as those of the south wall to that of Christ in the Host.

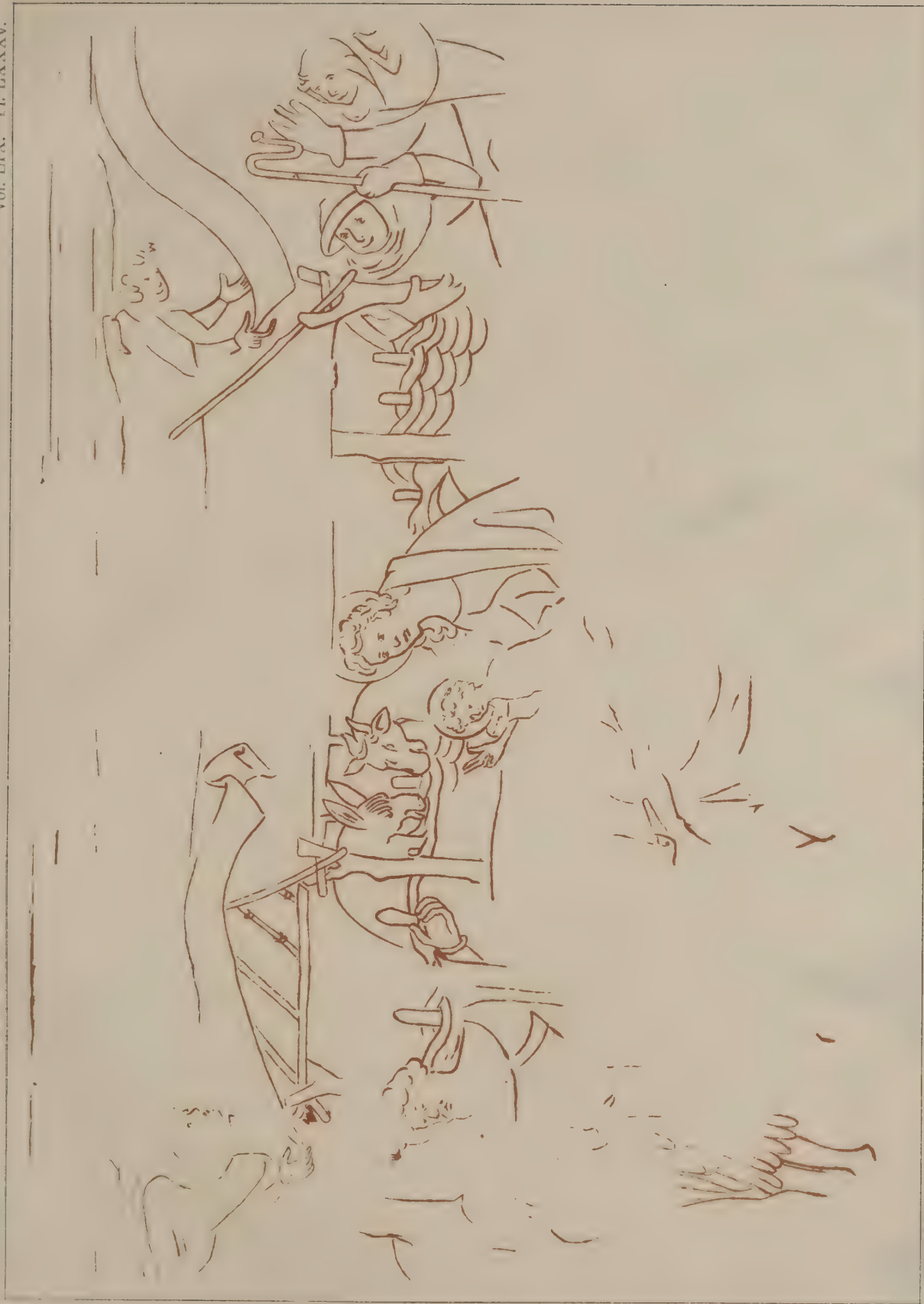
In the work of examining this last spandrel I was stopped by my severe illness in 1893, and it remained untouched until last summer. Mr. C. E. Keyser with Mr. P. H. Newman then inspected the wall, and Mr. Newman most kindly undertook the work of completing the examination, but unfortunately the wall was in such a defaced condition that no satisfactory tracing could be taken, the few remaining lines of colour showing only what seems to be the stem of a lily. From this we may surmise that the subject was the Annunciation, which is indeed just what might be expected from its place in the series, viz. next before the subject of the Nativity.

To the subject of the last-named picture I wish again to call your attention. It has already been partly described under the title of "The Stable at Bethlehem," in the first paper dealing with these wall-paintings,^a but was not then illustrated, owing to the lower part not having been disclosed.

We have here (Plate LXXXV.) a Nativity treated in the usual conventional manner, showing the Angels, the Shepherds, the Stable at Bethlehem, the ox and ass behind a wattled fence, the Virgin and Child, and the offering of the Magi. Of two Angels above the group he on the proper right faces the central figures, the other looks, not on them, but outwards at the Shepherds, who enter on the (proper) left. Both Angels hold scrolls, on which no vestige of lettering remains. The Shepherds are somewhat uncouth and quaint, their faces muffled up in hoods, the hands protected from cold (not an oriental usage) by clumsy mittens with only two divisions for thumb and fingers. One clings with his arm to the prop of the stable. On the head of the other are two curious little horny points which I suppose are meant for rough bristly hair pushed up through the folds of the hood.

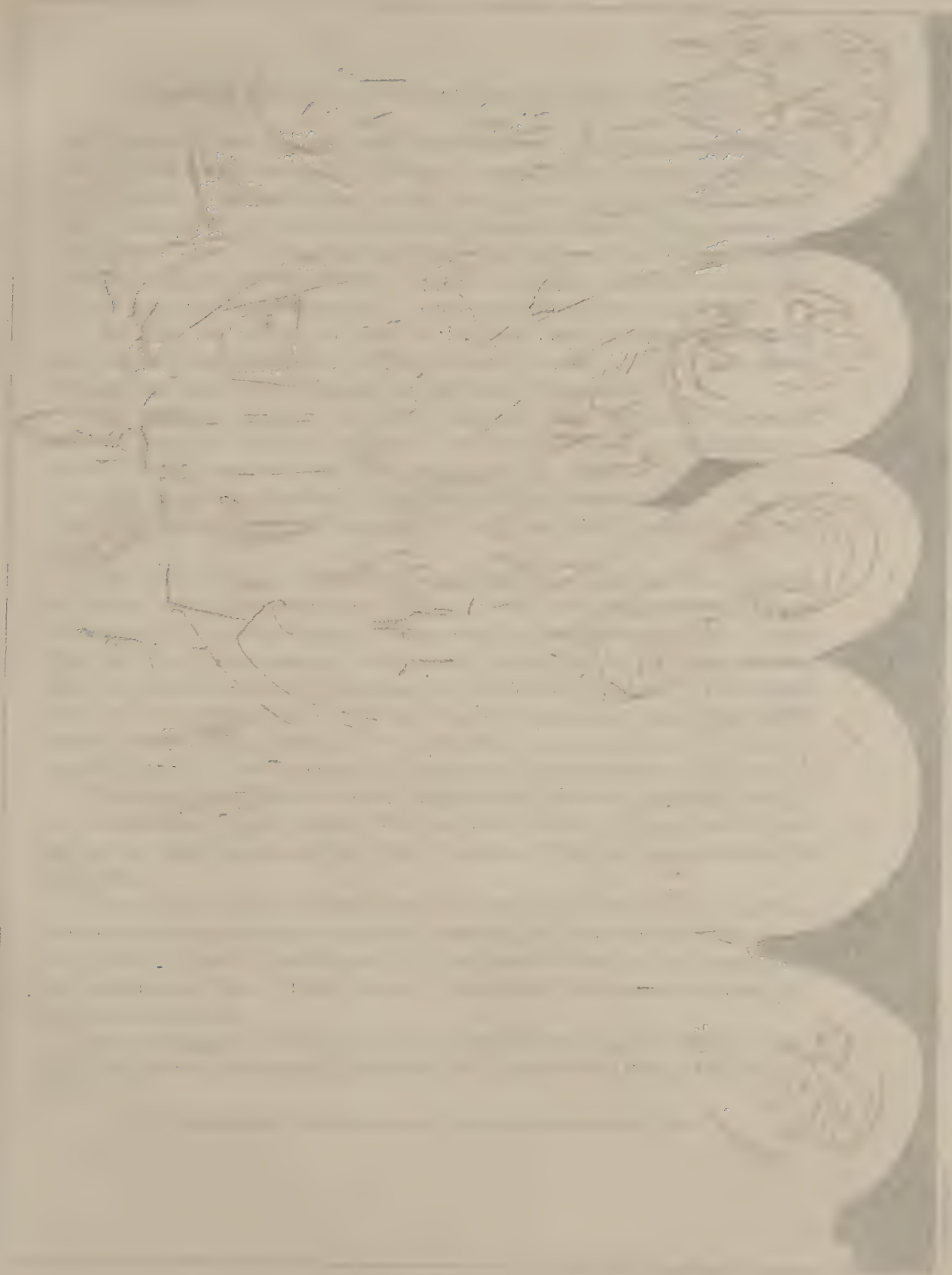
The Shepherds do not find "the Babe lying in a manger." The Holy Child (by a curious anachronism a child of some months' growth) is in fact not inside the stable. That is a mere open shed of rude construction, a thatched roof (painted in broad wash of yellow ochre) supported by rough cut props each with a forked head into which the timber of the roof is ingeniously inserted. A wattle fence in which the props stand encloses the ox and ass. In front of the fence the Virgin Mother sits supporting the right arm of the Holy Child, who holds up the hand, strangely out of proportion to the arm and body, with the two fingers raised as in benediction and extended towards figures on the side opposite to the Shepherds. Only one head is there visible, and curiously it is not turned towards

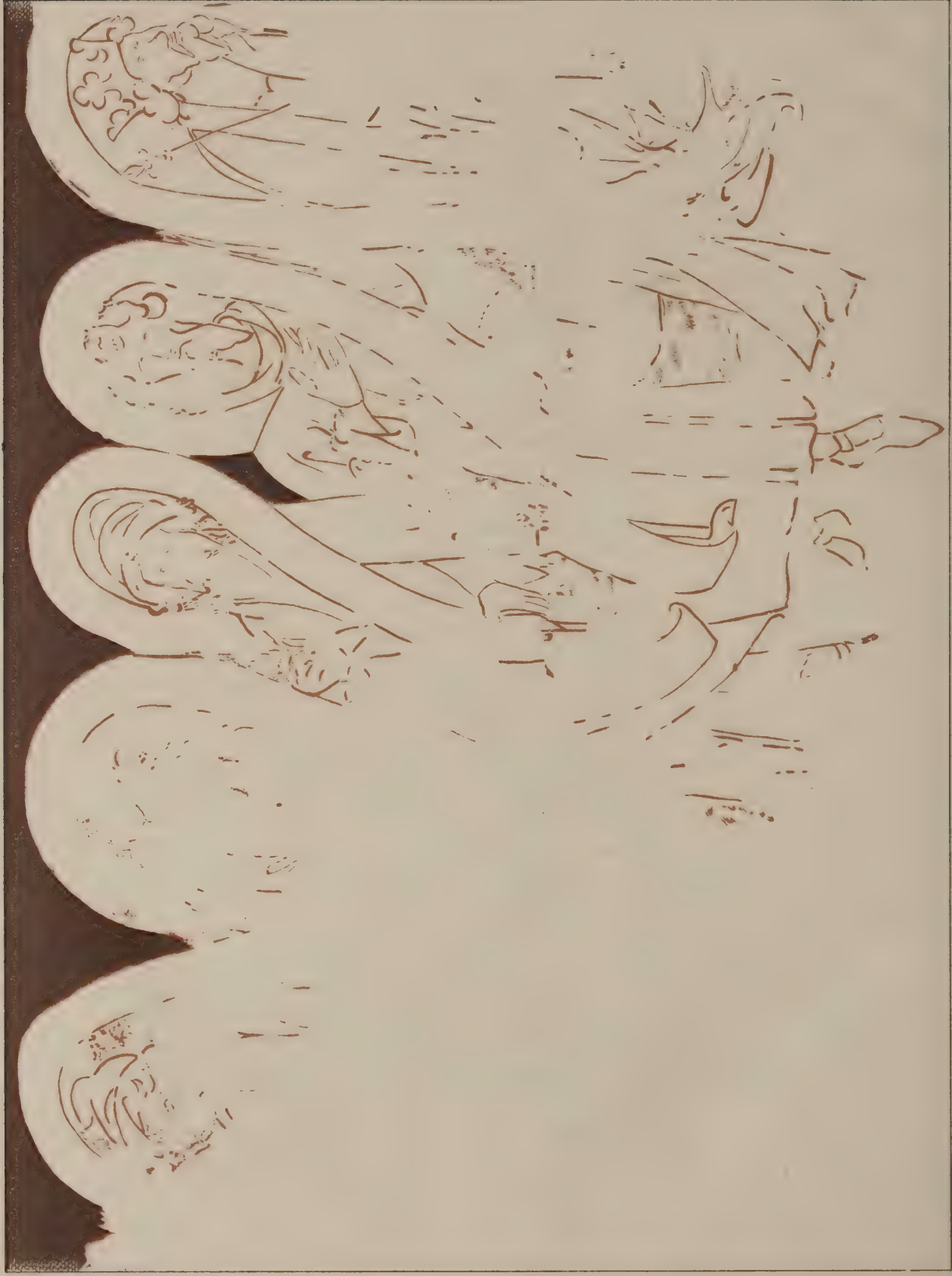
^a *Archaeologia*, xlviii. 275-6.



FRISKNEY CHURCH, LINCOLNSHIRE.—WALL PAINTING OF THE NATIVITY.

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the Virgin and Child, though a hand well drawn and apparently belonging to the above-named head is making an offering of a small vessel,^a probably of myrrh or frankincense. Possibly the head is that of St. Joseph and the hand belongs to some other figure, of which unfortunately almost all trace is lost, kneeling in adoration. There is much grace and dignity in the pose of the Blessed Virgin's head and neck, and in the attitude of tender maternal care with which the Child is held and his right arm supported. A nimbus surrounds the head of each.

We must not criticise the hand of the Child Jesus as out of drawing, but only as made abnormally large in order that the symbol of benediction should be manifestly seen by worshippers from the floor of the church

The primary intention of all these paintings, viz. instruction, is obvious from this and many other instances. The whole picture is a combination of several distinct incidents: 1st, The message of the Angel to the Shepherds; 2nd, The hymn of praise from "a multitude of the heavenly host"; 3rd, The visit of the Shepherds to the scene of the birth; and 4th, The adoration of the Magi.

The unities of time and place are not regarded as essential when, precisely as in the Resurrection, which stands next to this on the east, there is a concentration of the several events, viz. the actual and unwitnessed rising of Christ from the Tomb, the procession of the women bearing spices, the Angel seen by St. Peter and St. John, and the figure of the devout Magdalene. The *Picturæ Ecclesiæ* were designed to be *libri laicorum*, and thus meant to produce not so much correct artistic effect as to introduce as many instructive incidents as possible into the available space, their object not so much æsthetic as doctrinal.

It remains to consider two other tracings made by me ten years ago, but not as yet submitted to your notice. They are more difficult of interpretation than any of the earlier series, and they have a common affinity or mutual relation to each other.

First, I will ask you to observe that they occupy a similar place in the series, one on the north, the other on the south clerestory, and in the general treatment of each there is a marked resemblance. We may consider them as a pair expressing one predominant idea. This is evident, I think, from the character, composition, and grouping of each.

The interpretation of the picture in the south clerestory may be aided, I think, by a study of the corresponding picture on the opposite wall (Plate LXXXVI.).

^a This may, however, be the top of one of the uprights of the wattle fence.

In this, the first picture in the north clerestory, the idea seems to be a subject introductory and dedicatory to the series of paintings beyond.

In it are depicted, in long hooded gowns, and holding scrolls of their prophecies, the four Major Prophets, Isaiah, Jeremiah, Ezekiel, and Daniel, as the Fathers of the Ancient Church, and King David, crowned and holding a sceptre as well as a scroll, as foreshadowing the office of the Christ as Lawgiver, Prophet, King.

In the corresponding first picture of the south clerestory (Plate LXXXVII.), a Pope and four Doctors of the Christian Church are portrayed, as authorities on whom, with the sanction of the Pope himself, the doctrine of the mystery of Christ still present in the Host was based. The Pope is vested for mass and wears the early form of tiara with the single coronet, and the Doctors are clad in long tight-sleeved gowns^a with hooded tippets, and wear skull-caps. All five figures hold scrolls, but the legends on them have perished.

In the lower part of this spandrel is a smaller sized figure, in long gown, tippet, and round blue cap, kneeling and gazing eastwards towards the sequence of subjects along the south clerestory. From his hands, which are raised in supplication, issues a scroll.

We have no record of the very extensive reconstruction of the building early in the fourteenth or late in the thirteenth century, to which the arcades belong, but the fabric itself is a guide; the very stones tell their story in their examples of each successive style and architectural change with the date attributable to each.

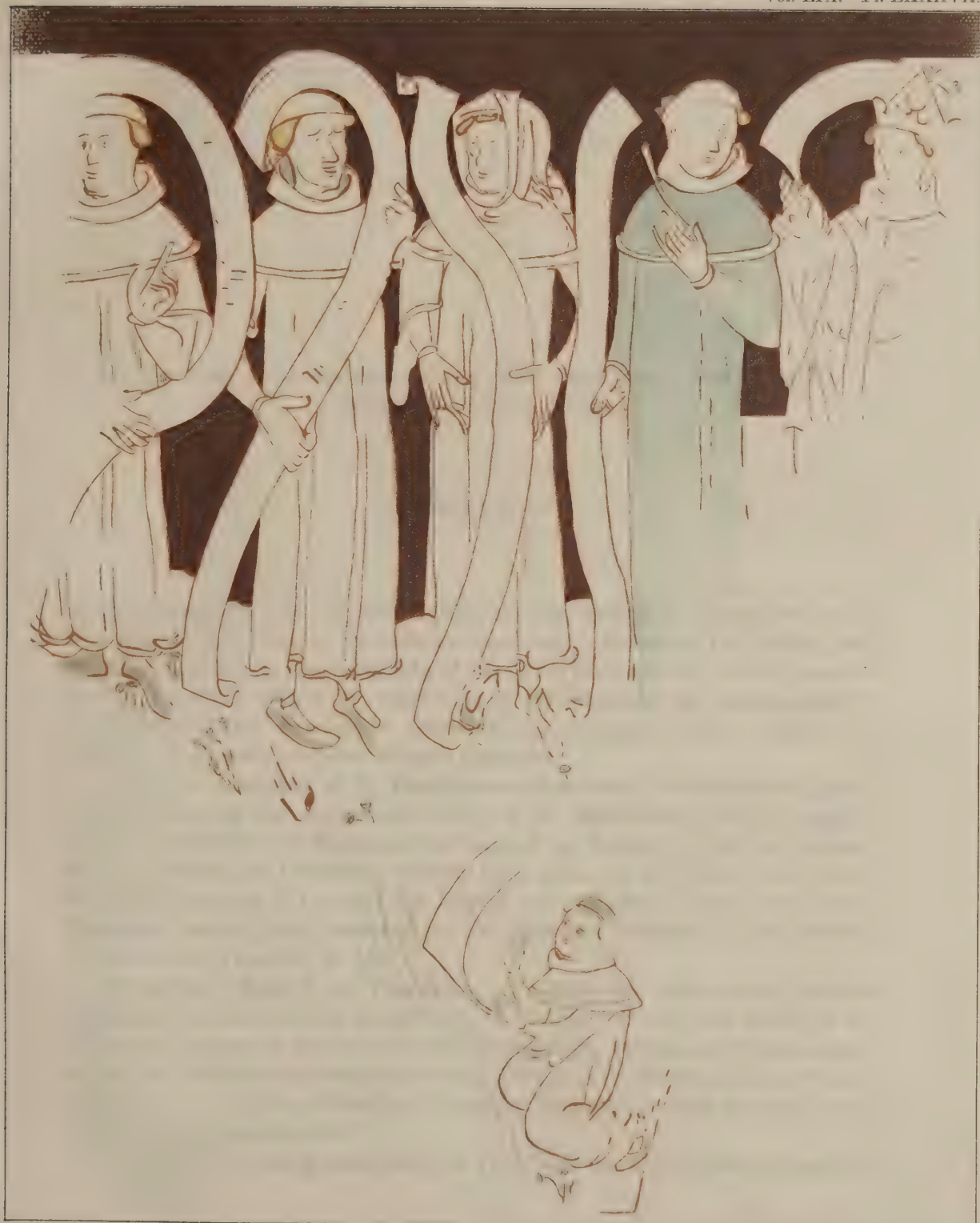
The costume of the small kneeling figure closely resembles that of a judge. In that case we have a clue towards ascertaining by whom and at what period not only the final decoration of the interior but also the whole structure of the church was made.

Among the names of the judges is that of Walter of Friskney. According to Foss,^b he was made Baron of the Exchequer on 6th August, 1320, Judge of Common Pleas in July, 1323, to which office he was reappointed on the succession of Edward III. in January, 1326-7, and became Judge of the King's Bench the following March. The last notice of him in the Year Books is in 2 Edward III.

There is unfortunately no record of his having done anything to Friskney church, but it is quite possible that he was the donor of the paintings in question.

^a The figure nearest the Pope is clad in blue.

^b Edward Foss, *The Judges of England* (London, 1851), iii. 430, 431.



FRISKNEY CHURCH, LINCOLNSHIRE.—WALL PAINTING OF THE POPE AND THE DOCTORS.

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FRISKNEY CHURCH, LINCOLNSHIRE. WALL PAINTING OF THE POPE AND THE DOCTOR

XIX.—*Notes on the Augustinian Priory of St. Bartholomew, West Smithfield.*

By E. A. WEBB, Esq., F.S.A.

Read 25th May, 1905.

RECENT researches have brought to light various matters of interest concerning this priory; some relate to the dates to which certain portions of the building may be assigned, others to the topography of the priory close soon after the suppression of the monastery, whilst the acquisition of three bays of the eastern alley of the cloister by the Restoration Committee has brought to light work of the twelfth and fifteenth centuries hitherto concealed.

The present church of St. Bartholomew the Great, West Smithfield, is the monastic choir of the Augustinian Priory of St. Bartholomew, which, together with St. Bartholomew's Hospital, was founded by Rahere in 1123, as recorded in the history of the foundation written by a canon of the priory about 1180. A Latin transcript of this and an English version, done at the close of the fourteenth century, are preserved in the Cottonian collection in the British Museum under Vespasian B. IX.

From this "Book of the Foundation" we learn that when Rahere was on pilgrimage to Rome, being dangerously ill, he made a vow that should he be allowed to recover he would "make an Hospitall yn recreacion of poure men." On his way home he was further directed in a vision of St. Bartholomew to "found a church . . . yn the subbarbis of London at Smythfeld," which we are told was "withyn the kynges market."

FitzStephen, writing about the year 1174, says that a horse market was held

here every Friday,^a also horse racing, of which he gives a very lively and graphic description.

Pope Celestinus III., in an unpublished bull dated 29th August, 1191,^b when granting a petition of the master and brethren of the hospital for a cemetery of their own, recites the reason, given no doubt by the petitioners, that "owing to the large number who sojourn in the hospital and the great distance to the cemetery of the priory (not very many yards off, by the way) the labour of conducting the funerals is very great through the muddy streets and horse market," thus confirming FitzStephen's statement. Smithfield, so called from the Anglo-Saxon Smæd feld, the Smooth field, is outside the London Wall, and in addition to being a horse market was also the place of the gibbet.

To secure a grant of this site Rahere obtained the favour of the Bishop of London, the good Richard de Belmeis, and in the presence of the bishop addressed himself in person to King Henry I. The chronicler goes on to say that^c "Rahere, having obtained the title of desired possession . . . than ij werkys of pyte began to make . . . oone for the vowe that he hadde made, an othyr as to hym by precepte was unjoynyde," referring respectively to the hospital and the church. And I think we may assume that the works went on simultaneously, for he continues, "The chirche he made of cumly stoonewerke tabylwyse, and was an hospitall howse a little lenger of from the chirche, by hymself he began to edifie." The king was intimately associated with the foundation of the priory, and his successors spoke of it as their "demesne" church and of the canons as their "demesne" canons, and the arms of the priory are *gules two golden leopards and as many crowns in chief*. But the hospital seems to have been essentially Rahere's own foundation, the outcome of his own vow. It bore different arms, *party silver and sable a chevron counter-changed*,^d and the chronicler seems to indicate this difference when he says the "hospital . . . by hymself he began to edify."

Of an original deed of grant of the site by the king there is no trace. The

^a The horse market continued to be held on Fridays for over six hundred years. One of the duties of the parish beadle required by the vestry in 1774 was to "keep the horses out of the close on Fridays."

^b Hospital Cartulary, f. 49.

^c Book of the Foundation, lib. i. cap. i.

^d When the hospital adopted these arms is not at present ascertained. At the College of Arms they occur in a collection of Venetian arms (Vincent, No. 171, pt. ii. p. 85.) under the name of "Renier."

grant of privileges by the king in 1133 confirms all the lands in the possession of the priory but recites no previous deed, and it is quite possible that such a deed never existed. But that the writer of the Book of the Foundation was correct in saying that the king granted the site is confirmed in a deed of confirmation (without date) by a Thomas archbishop of Canterbury,^a which says, "King Henry the first granted the said site to them in frank almoign and by his charter confirmed it." And King Richard I. in his charter of confirmation, dated 23rd March, 1190,^b also confirms the grant of "the gift of King Henry our great grandsire the place of Smethfeld in which their church was founded and the hospital house of the same church."

The bounds of the present parish of St. Bartholomew the Great were the bounds of the priory, and probably indicate the exact site granted for it to Rahere; there seem to be no records of either additions or alienations as in the case of the hospital site. The present ordnance map of the parish is not accurate as to the boundary line north of the Cloth Fair gate. The particulars of the bounds in 3 Henry VIII.^c say that the boundary line was on the outside of the west side of "le cheyne" to its north end, then turned eastward along the north end of "le cheyne," then northward along the outside of the west gate of the Fair and along the outer walls of the houses, and at Long Lane along the stone wall of the monastery. The ordnance map draws the line some distance into the road from the west gate of the Fair and from the walls of the houses. This "le cheyne" is shown in Ralph Agas's map as a low wall with an opening in the middle in front of the west entrance to the church. This opening was probably closed by a chain as a protection on Fridays from the horse market.

The priory close was entered by at least three gates. The great south gate was opposite the Little Britain entrance to the hospital, and had rooms over it occupied by the gate warden. The next was the present Cloth Fair gate, known as the west gate of the Fair of St. Bartholomew, where the Lord Mayor of London annually proclaimed Bartholomew Fair, and the third was in Long Lane, not mentioned in the parish bounds by Henry VIII. in 1544, but clearly shown in Ralph Agas's map about 1562. It is probable that there was also a small postern gate from Aldersgate Street.

These gates were apparently more than sufficient, for in his visitation in 1303

^a Hospital Cartulary, f. 39d.

^b Public Record Office. Memoranda Rolls, L. T. R. 1 Ed. III. Trin. Term, m. 46d.

^c Public Record Office. Augmentations. Particulars for grants, 927, m. 5.

Archbishop Robert of Winchelsea^a directs that "the gates of the close and of the houses within it be more strictly guarded and kept shut at the due hours, lest by the frequent coming of the seculars as has been wont to happen the brethren be disturbed in the divine offices."

Rahere held at first the double office of prior of the canons and master of the hospital, but the burden was too great for him, and when the fame of his church and the miraculous cures of the sick began to spread he obtained the assistance, we are told,^b of "a certeyn olde man Alfun by name to whom was sadnes of age and experience of long time . . . and deputed him as his compayr" and accepted his counsel and advice. This Alfun had just completed the building of the church of St. Giles Cripplegate, and used to collect meat from the neighbouring butchers for the sick of the hospital; the successors of those butchers are still with us in large numbers in Smithfield. Alfun was never master of the hospital, as is often stated, but in 1137 Rahere relinquished the mastership and appointed Hagno to the post, presenting him at the same time to the vicarage of St. Sepulchre's church.^c

From the time that the prior of the monastery no longer held the post of master the hospital seems to have agitated for home rule, and dissensions arose which were the subject of ordinances by Thomas,^d the prior of St. Bartholomew's in the year 1147, and by the following Bishops of London, namely, Richard of Ely^e in 1197-8, Eustace of Fauconbridge^f 1224, Simon of Sudbury^g in 1373, and Richard Clifford^h in 1420. The popes also interfered and issued bulls in connection with the disputes, of which the bishops in their ordinances did not always take heed.

Rahere built the choir of the church, at some period soon after 1123, as far as the crossing, and began the transepts to give the necessary abutment to the eastern arch of the crossing. He also built three apsidal chapels, one at the east end, one on the north side where the Apostles' Mass was said, and a third on the south side, dedicated respectively in honour of Our Lady, St. Bartholomew, and St. Stephen. A similar arrangement originally existed in the cathedral church of Norwich.

Rahere died in 1144 and was succeeded by Prior Thomas from St. Osyth's

^a Reg. Lond. Baudake, f. 6.

^b Book of the Foundation, lib. i. cap. xxii.

^c Dr. Norman Moore has drawn my attention to this fact.

^d Hosp. Cart. f. 46.

^e St. Paul's Lib. Box 25, No. 643.

^f Hosp. Cart. f. 53d.

^g St. Paul's Lib. Box 25, No. 644.

^h Hosp. Cart. f. 57d.

in Essex, who continued the building; as the writer of the Book of the Foundation quaintly puts it, "with more ampliati bylyng were the skynnys of oure tabernaculys dylated to the laude and glorie of our lorde Jhu Christ"

The point where Rahere's Norman work ends at the east arch of the crossing and Thomas' transition work begins is well defined. The latter consists of the other three arches of the crossing, the one bay of the nave still standing, and the west side of the transepts. The triforium arch of transition work, on the west side of the south transept, which was only brought to light during the recent restoration, faces Rahere's earlier work on the east side.

Prior Thomas began his nave at a level some fifteen inches above that of the choir, and in consequence, when in later times it was desired that the choir should be higher than the nave, the object could only be effected by levelling up the choir floor, whereby the bases of all the piers were buried; this was done at some period prior to the building of the Lady Chapel in 1336.

The nave of the church and also the arched doorway from Smithfield were built during the thirteenth century, but the stones of the nave were sold and removed by Henry VIII. at the suppression, and as we have come across no records to guide us it has not been possible to fix the exact dates of it. It is probable, however, that after the death of Prior Thomas in 1174 the work went steadily forward either under his successor Prior Roger or some other early prior, for there are signs in the masonry that the two existing nave clerestory windows were inserted in place of earlier ones by Prior Thomas, and the simple circle in the head of the two-light windows which are without tracery indicates a date about 1190. The two clustered shafts at the entrance to the south transept are later than the clerestory windows, and one shaft is later than the other, pointing to progressive work through the whole of the thirteenth century.

In the fourteenth century, the building probably being completed, alterations were begun. In the ambulatory behind the high altar are two fragments of mouldings of that period. They may be seen above the capitals of the two great piers which stand on either side of the two modern central piers of the apse. These formed part of the present Lady Chapel rebuilt apparently in the fourteenth century; for one Stephen of Clopton, gatekeeper of the priory, by his will dated 6th January, 1336,* demised to the priory his shops in the parish of St. Mary Aldermanbury "for the maintenance of the work of the chapel of St. Mary newly constructed in the said priory."

* Calendar of Wills in the Court of Husting, i. 427.

The great alterations and restoration of the monastic choir and other buildings which followed probably began with the building of the Walden chapel about the year 1395. The wills of the period give evidence that the church was in need of repair as early as 1393,^a for in that year John Wright bequeathed 12 marks to the fabric of the church. In April, 1396, John Newport in his will^b desired that his body be buried "within the chapel of the venerable Lord Roger Walden, Treasurer of England, in the church of St. Bartholomew by Smithfield," which fixes the date of the Walden chapel not later than that year. John Walden, in his will dated 1404, describes the chapel as on the north side of the church, so that the pointed arches and shafts which we see in the bays of the north wall of the ambulatory of the choir were probably inserted in connexion with the chapel, which must have occupied the site of what is now an open area. These arches were probably filled with screen work, and the chapel entered from the transept through a door of which one of the jambs, discovered in 1892, still remains.

An entry in the Calendar of the Papal Registers^c of a grant of indulgences throws great light on the restoration works carried out by prior John Watford between 1404 and 1409. It is dated at Pisa, 6 Kal. September (27th August), 1409, and consists of a grant by Pope Alexander V. of the same indulgences and remission of sins, during ten years, as is gained by those who visit St. Mark's, Venice, on the Ascension Day, to penitents who on Maundy Thursday, Good Friday, and Holy Saturday, and on the Assumption from the first to the second vespers of that feast, visit and give alms for the repair and conservation of the Augustinian Monastery of St. Bartholomew in West Smithfield, in the diocese of London, the Pope having learned that :

Through the malice of the times the monastery is in great part destroyed in its houses and buildings ;

That its said houses are greatly ruined with age ;

That its tenements in the city of London, which ten or twelve years ago were wont to bring in more than 100 marks a year, hardly bring in to-day, on account of the penury of men, half that sum ;

That the monastery a short time ago, through the enmities of a certain powerful enemy, lost 60 marks, out of which [marks] the prior was and is bound to find two priests for the celebration of masses for the soul of a certain person deceased, and to minister to them the necessaries of life ;

^a C. C. L. Courtney, f. 288.

^b C. C. L. Courtney, f. 370.

^c Vol. vi. 151.

That on account of the frequent inroads of the sea and its floods many goods of the monastery within the parish of Southtown of Jernemuth (Yarmouth) have been and are so much annihilated that for several years the prior has received from them little or nothing ;

That the same prior has rebuilt the cloister, bell tower, high altar, and chapter house of the monastery church at no small cost, whence he has many creditors ;

That the monastery requires several reforms which cannot be carried out for want of money ;

And that the monastery being situate in a very famous place of the realm, very many resort thither from the realm and from divers other regions to its grave burden.

This grant gives us a very graphic description of the state of affairs of the monastery at that period ; its buildings destroyed, its income greatly reduced, the calls on its hospitality ever increasing, and a heavy debt incurred by a great restoration. It would be interesting to know to what sum the alms of the penitents amounted, but we know that they were not sufficient for the purpose, because twenty-four years later, in 1433, the bishop of London, Robert FitzHugh, made an ordinance at the request of the then prior, William Coventre, whereby the rents were to be collected for a period of three years under the supervision of Walter Sherrington (Chancellor of the Duchy of Lancaster and Canon of St. Paul's), because the debts of the priory far exceeded the yearly income.^a

The malice of the times may refer to the Wat Tyler riots of 1381, for the rioters broke into St. Alban's Abbey, did great damage to the Temple buildings, and burnt St. John's Priory, Clerkenwell ; they executed the prior, Sir John Hales, and Jack Straw burnt down the prior's house at Highbury. They were much incensed against the monasteries, and St. Bartholomew's may have fared badly at their hands, for we have it on record that after Wat Tyler had been slain before the priory gates and his body carried into the master's chamber at St. Bartholomew's Hospital, the king led the rabble away for fear that they should set fire to the houses in Smithfield.

On the other hand a settlement^b would account for the large crack we still see in the great pier at the north-east corner of the crossing, and might have done the damage which necessitated the rebuilding of the bell tower, together with the north and west arches of the crossing. It has always been known, from the mouldings of the corbels of the west arch, the capitals of the slender Norman shafts which support the north arch, and the base to the shafts against the north-east pier, that there had been a rebuilding which must have involved the bell

^a St. Paul's Library, Box 25, No. 645.

^b A great earthquake in England occurred in 1318.

tower, but this papal grant is the first documentary evidence that we have obtained of the fact. It shows that Stow was not very far wrong when he attributed the rebuilding to the year 1410.

In the same way it was known that there had been a reconstruction of the east end of the choir, for the window jambs and fragments of the string course remain of two large windows which formed part of the wall that replaced the Norman apse and served as a back to the high altar; but here again this is the first documentary evidence we have of this important change. No mention is made in the pope's grant of the building of the founder's beautiful tomb, nor of the rebuilding of the clerestory, which it is reasonable to suppose was carried out at the same time as the rebuilding of the high altar; for the eastern bays of the clerestory would have been involved in the demolition of the apse.

We did not know before that the chapter house was rebuilt at this time, because it was entirely destroyed by the fire which did so much damage to the priory in 1830, and the prints that remain, showing it to us as used by the non-conformists as a place of worship, give no indication as to its architectural period.

The information which we obtain from this entry in the Papal Registers, that the cloister was rebuilt at the same time, comes at an opportune moment, because the present Restoration Committee have recently acquired the only three bays that remain standing.

Since the suppression of the monastery in 1539 the cloister has had a chequered existence. The entrance to it from the monastic choir was apparently built up whilst the destruction of the nave was taking place, that is between 1540 and 1544, for a beautiful fragment of thirteenth-century work has been found in the rough masonry with which the larger entrance to the cloister had been filled.

Had the filling in taken place after 1544 this fragment of the nave, which still shows the colours of its decoration, would have followed the rest of the stones which Henry VIII. specially mentioned, in his grant to Rich, as being turned to his own use and sold; * and as a matter of fact during the whole of the restoration works scarcely any fragments of the nave have been found. The cloister with the gallery over the eastern alley was included in this sale by the king to Lord Rich, and remained in his possession until 1555, when, on the 17th September, he granted it^b with the church, advowson, and monastic buildings to Queen Mary "for divers causes and consideration me moving," no pecuniary sum being

* Originalia Rolls, 36 Henry VIII. pt. 4, rots. 147, 148.

^b Close Rolls, 2 and 3 Phillip and Mary, pt. 11, m. 28.

named. He describes it as "all the enclosure or square corridor now or lately called the Cloyster with its appurtenances . . . and all those four sides of the same enclosure . . . and also all and singular the houses chambers places and erections . . . above and beneath the said enclosure or corridor, and also a long chamber or ambulatory with its appurtenances being above the eastern side of the aforesaid enclosure or corridor." Queen Mary at once put in the Dominican Friars with Dr. William Perrin as prior. He died in 1558, and on the 13th July the following year the Dominicans were suppressed by Queen Elizabeth. During their occupation there are indications that they contented themselves with a small temporary entrance into the cloister, for in the rough masonry with which the entrance arch was filled a small doorway had been formed. Probably the expense of making new big doors in place of the original ones, which in the meantime had been fixed to the new west entrance to the now naveless church, deterred them from making use of the larger entrance.

After this last religious occupation of the cloister we find no mention of it for a hundred and eighty-four years. To what base uses it was put in the interval we do not know, but in 1742 we read^a of eight arches of the eastern part of the cloister as then remaining but reduced to the mean office of a stable. Malcolm,^b writing in 1802, also says it was then in use as a stable. He gives the dimensions as 95 feet by 15 feet. He describes the arches, groins, and bosses (which he illustrates) as being "perfect, most delicate, and exquisitely proportioned."

On May 3rd, 1830^c a fire destroyed the rooms above the eastern alley and the vaulting apparently fell. The floor was then levelled up some seven feet to the existing street level and the building again used as a stable. The three northern bays are the ones now recovered by the Restoration Committee. From these the horses and their stabling have been removed, and the earth excavated down to the original floor level. The Norman doorway through which the Augustinian canons passed by day from the cloister to the church has been opened out to view, and the original monastic doors rehung, so that once more approach can be had thereby from the church. The remains that have been found are disappointing in extent, but carefully measured drawings have been made of them by Mr. Maurice E. Webb, a set of which has been accepted by the Society, thereby placing on record the exact condition of these three bays of the eastern alley in the year 1904.^d

^a *New and complete Survey of the Cities of London, Westminster*, ii. 921.

^b *Londinium Redivivum*, 288.

^c Vestry minute book of that date, p. 51.

^d They are signed by his father, Sir Aston Webb, R.A., as architect of the restoration.

The next three bays to the south were pulled down to the present ground level some twenty years ago and rebuilt as stables, so that no remains are visible, but in the wall of the seventh bay the arched doorway leading up to the "dortor" still exists. It was exposed to view for a few days in December, 1903, in the back premises of the City of London Union offices, or what was originally the extreme north-west side of the dormitory of the monastery. An arch of the last bay of this east side of the cloister is also still existing; it was exposed in April, 1904, in the back yard of No. 62, Bartholomew Close, a house which occupies the east end of the "fratry." Only the upper portion of the arch is above the present street level, and only the left hand side of the arch is exposed. Mr. Saunders, the lessee, very kindly allows any antiquary to inspect it. Both these arches, like the cloister, date from the early fifteenth century.

The "fratry" itself extended the full length of the south side of the cloister. A description of it twenty-three years after the suppression is contained in Bishop Grindal's letter to Sir William Cecil, of 3rd July, 1563,^a in which he speaks of it as being "well buylded off free stone, garnished within rounde abowte with marble pyllers [and] large windows."

The grant of Lord Rich to Queen Mary exactly describes the position of the kitchen, the misericord, parlour, and also of the library. Abbreviated it may be read as follows: I further grant a long building on the south side of the said corridor [of the cloister] lately called "le Fratry," also a building called "le old Kitchin," late the cookhouse of the priory at the west end of le Fratry, and a room called "le Misericorde" at the east end of le Fratry, and a building called "le Library," being above le Misericorde, and a building called a Parlour on the west side of le Fratry.

Fresh light has recently been thrown by proceedings in Chancery, in the time of Queen Elizabeth,^b on the origin of the rooms above the thirteenth-century archway which leads from Smithfield to the church, whereby it would appear that they superseded chambers existing there before the suppression.

By these proceedings in Chancery of the years 1590 and 1596, David Dee, the rector of St. Bartholomew the Great at that time, after entering a suit to eject one Anne Lupton from one of the glebe houses of which she claimed to hold a lease, then lodged a plaint against six other tenants of the glebe houses.

One of the defendants, Philip Scudamore, replies that Dee had made title

^a Lansdowne MS. 6, art. 55.

^b Proceedings in Chancery C. c. 5, No. 34, D.d. 9, No. 46, and No. 54 Elizabeth.

to certain rooms over the Smithfield gate and three tenements in Duck Lane, which were his freehold; being uncertain to which of these the rector laid claim he proceeds to particularise them all, and in so doing thus describes the rooms over the gate :

That the said Sir Richard Riche deceased, in the tyme of the late king Henry the eighth was seised in his demesne as of fee of and in one messuage & tenemente seituate within the close of Great St. Bartholomews aforesaid, videlicet, in the Church Rowe there and adjoining to the gate of Great St. Bartholomews aforesaid leadinge from the Church there into Smithfield and of and in certain chambers or rooms one over another auntyently edified builded and standinge over and upon the same gate on an arche of stone and two greate mayne pillars of stone beringe upp the saide arche chambers and rooms.

Then tracing the descent of the property to himself Scudamore proceeds :

By force whereof the said defendant did into the said messuage roomes chambers & pillars with the appurtenances enter & was and is therefore seised in his demesne as of fee and being thereof so seised hath sithence pulled downe all the said old buyldings roomes and chambers that were then standing over and upon the saide arche and pillers and upon the same arche and pillers about or in the xxxvijth yeare of the raigne of our saide Sovereigne Ladye Queene Elizabeth hathe newly erected and builded other chambers and roomes in lieu and steade of the old decayed and ruyned edificies.

Thus in 1595 the rooms "anciently builded" were pulled down and rebuilt, and I think it is fair to infer that those ancient rooms were older than the time of the suppression, which occurred some fifty-six years before.^a

The litigious David Dee made much trouble in the parish, and was eventually deprived in 1606.

^a When these notes were read before the Society last May, this seemed to me to indicate that the Smithfield arch was always, as shown in Agas's map, an entrance gateway into the monastic precincts, with rooms for the warden above; but since then, at the suggestion of Mr. W. H. St. John Hope, excavations in the west approach to the church have revealed the base of the south wall of the nave as being continuous to this arch, and that, together with the fact pointed out by Mr. Hope that the arch is seven feet thick, draws me to the conclusion that the church had a west front facing Smithfield flanked with towers, and that these "chambers anciently builded" were chambers in the south-west tower over the arched doorway, which led into the south aisle of the church. The pillars referred to are still there; the one on the south side unfortunately is covered by the shelves in a stationer's shop. The rooms above the arch are now very old, and although the wall appears to be of brick, it is in reality of timber faced with tile skilfully hung to resemble brick.

Philip Scudamore was knighted in 1603. His wife Elizabeth, who is commemorated by a tablet in the church, was the grandmother of Sir Robert Chamberlayne of Sherbourne Castle, whose monument is on the wall of the church above the pulpit.

The monastic buildings at this time were occupied by the nobility and gentry, as is shown in a rental and survey of the inheritance of Sir Henry Riche taken in November, 1616.^a By that document it appears that Lady Scudamore, probably the second wife of Sir Philip, held part of the mansion house of the Lord Rich, which from the description given was clearly the dormitory of the monastery and valued at £50 a year. Lord Abergavenny was her tenant at the time. Sir Thomas Neale's house was near, and would seem to have been the "fratry" or a portion of it.

The Lady Chapel was occupied by Sir Percival Hart, who had the crypt for a cellar and the north triforium for a "chappell chamber," which is described as "opening into the church within a reasonable distance of the pulpit." Subsequently this "chappell chamber" became the parochial schoolroom. The house was valued at £40 a year.

Arthur Jarvais, Esq., held another "parte of the mansion house of the Lord Rich." It was valued at £100 a year, the highest value of any house in the parish. Arthur Jarvais was Clerk of the Pipe from 1603-1624, and in one of the rooms in the house the office of the Pipe was kept. From the house there was access to "two chambers called chappells with large windows opening into the church over against the pulpit, one of which was used for a lodging room without a chimney but the other having a chimney for use if need require"; evidently the south triforium of the church is here indicated, one of the windows being Prior Bolton's oriel. I suggest that this house was the prior's house, rebuilt by Prior Bolton, who has left his rebus on the window referred to and also on the doorway in the east end of the south aisle, which would have led from the church into this house. The position of the house was at the south-east corner of the present church, occupying part of the site of the present vestry room and warehouse adjoining, and then carried south across the present entrance to Cockerell's Buildings. It was subsequently occupied by the first Earl of Middlesex, who resided there from 1636 to 1640, and for a century after the dwelling was known as Middlesex House. The way through it to Bartholomew Close is still named Middlesex Passage. At the Restoration of Charles II. Middlesex House was con-

^a Public Record Office. Rentals and Surveys, 11/39, 16 James I.

— IN THE FIRST HALF OF THE 17TH CENTURY —

— SHOWING THE RESULT OF THE EARL OF HOLLAND'S BUILDING ABOUT 1615

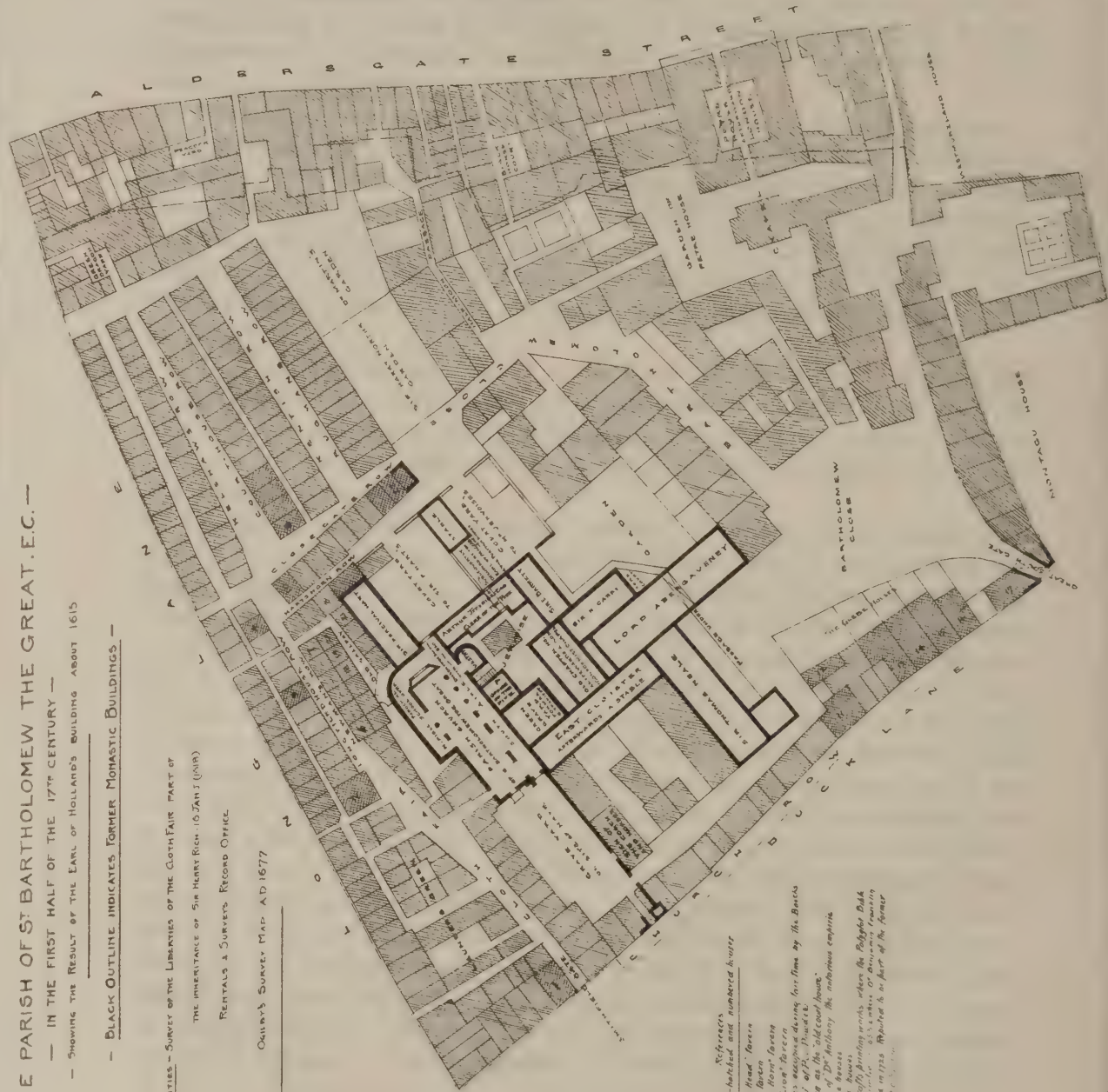
- BLACK OUTLINE INDICATES FORMER MONASTIC BUILDINGS -

AUTHORITIES - SURVEY OF THE LIBERTIES OF THE CLOTH FAIR PART OF

THE INHERITANCE OF SIR HENRY RICH. 16 JAN 5 (1918)

RENTALS & SURVEYS RECORD OFFICE

Ogilby's Survey Map AD 1677



References
on cross-hatched and cross-hatched

1. "Bury My Heart at Wreath"
2. "The" "The"
3. "Hells Horn" (singing)
4. "And Love" (singing)
5. "The" "The"
6. "The" "The"
7. "The" "The"
8. "The" "The"
9. "The" "The"
10. "The" "The"
11. "The" "The"
12. "The" "The"
13. "The" "The"
14. "The" "The"
15. "The" "The"
16. "The" "The"
17. "The" "The"
18. "The" "The"
19. "The" "The"
20. "The" "The"

verted into a nonconformists' meeting house, the north part, which was the south triforium of the church, being used as a chapel by such presbyterian divines as John Rowe, ejected from Westminster Abbey, John Quick, the ejected minister of Brixton, Devon, Dr. Caleb Fleming, and others. Later on the triforium was used as a dissenting school, and the ancient chapter house was fitted up as the meeting house.

Sir Edward Barrett, knight, son of Charles Barrett, Esq., of Belhouse, Essex, and grandson of Sir Walter Mildmay, who is buried in the church, rented from Lady Scudamore a house on the left after passing through Middlesex Passage, that is to say on the east side of the dormitory. It is described as adjoining both Lord Abergavenny's and Mr. Jarvais's mansion. If the latter was the prior's house, then Sir Edward Barrett's would have connected it with the dormitory. It was valued at £31 a year.

Sir Henry Carey, knight, was living in a house within a small triangular court between Sir Edward Barrett's and Lord Abergavenny's, joining both of them, and was valued at £40 a year.

This house and Sir Edward Barrett's may possibly have been the prior's house before Bolton's time, considering their position in regard to the "dortor."

I am indebted to Mr. G. W. Miller for collating this survey with Ogilby's map of 1677, only sixty-one years later than the survey, and marking the position of the various houses on the map here reproduced. (Plate LXXXVIII.) The street names of the period mentioned in the survey are also indicated on the map.

Cloth Fair extended from Smithfield to the north transept of the church. On its north side was Launder's Green, between the narrow courts now called New Court and Sun Court. This was apparently the washing ground of the monastery.

The continuation of Cloth Fair on the north side was called Long-tiled House Row, and on the south side Newman's Row. Middle Street was called Kershaw's Row on the north side after a man of that name, and Court House Row on the south, because here was the Hand and Shears public-house, in which the Court of Pye Powder was held, standing there to this day. The old court house was in Long-tiled House Row. The present Newbury Street was Kentish Row on the north and Rugman's Row on the south, where we may presume men who sold woollen rugs at the Fair exhibited their wares.

The building of these narrow streets and small tenements over the market ground of the priory was the work of Henry Rich, the first Earl of Holland, the

younger son of the first Earl of Warwick. He married Isabel, daughter of Sir Walter Cope, who had built Cope Castle at Kensington, and on being created Earl of Holland renamed the place Holland House. On his marriage in 1612 his father settled on him the St. Bartholomew property, and in 1636, writing a chatty letter to the Earl of Middlesex, then resident in the parish, Thomas Gondrey refers to the poor of St. Bartholomew's as "the commodity the parish hath gotten by the Earl of Holland's building."

The leases which Earl Holland granted of the houses in Cloth Fair in 1656 contained a clause reserving the shop portion of the house for a space of seven days every year during the Fair, that is to say on St. Bartholomew's day, three days before and three days after, to be let by Lord Holland as a booth in the Fair. Further, the tenant was not to have more than one family in the house at one time without the consent of the rector and churchwardens.

Thomas Roycroft's printing press was in Bartholomew Close, adjoining No. 40.^a It was here that he printed the great London Polyglot Bible in 1653, and it was here in 1725 that Benjamin Franklin worked as a printer's compositor for S. Palmer, a successor of Roycroft. Rowe Mores, writing in 1778,^b says the house was part of the priory. It was to the east of the prior's stables, and may have been the granary.

I wish now to draw attention to the position of the parish chapel before the suppression. Henry VIII., in the grant to Rich from which I have already quoted, says "not only a great part of the church of the same late monastery or priory but also a certain chapel commonly called 'le Parishe Chapell' annexed to the same church wherein the said Parish & inhabitants used to have receive & hear divine service and to have such by the said curate to them administered has now been utterly taken away thence." My opinion is that the north transept of the church formed the parish chapel, and that it was approached from Smithfield directly by way of Cloth Fair.^c The transept at that time being deeper than now would have terminated the road. At present Cloth Fair diverges to the north at that point. The stone screen which separates this transept from the present church was, prior to 1863, not pierced as now, and had a solid face on the church side, so that the transept was entirely isolated from the monastic choir, save for

^a Reed's *Letter Founders*, p. 217. Vestry Min. Bk. March, 1790, p. 2.

^b *Dissertation on Eng. Typog. Founders*, p. 58.

^c Mr. W. H. St. John Hope suggests that, as in the parallel case of Romsey Abbey, the transept formed the chancel of the parish chapel, and that westwards of it was a nave continuing westwards down Cloth Fair, parallel to and adjoining the north aisle of the priory church; but whether this was so or not there is not at present sufficient evidence to determine.

a small arched doorway for access west of the crossing; it was thus most conveniently situated for all parochial purposes.

Whether the parish chapel had its own bell tower or not is unknown. We have now five pre-Reformation bells in our present tower, a sixth was exchanged for a clock bell in 1815.^a It has recently been pointed out in an article in the *Bell News*, 23rd April, 1904, by Mr. R. A. Daniell, that these were probably the parochial bells, as Stow says the monastic bells, six in a tune, were sold to the parish of St. Sepulchre. That the bells, like the plate, should be sold for the king is what we should expect, but I am told that our present parochial bells are the top five of a ring of twelve bells. If that is so, it would point to their being part of the monastic ring which would have been one of twelve, a large number of bells for such an early date. Our five bells bear the founder's mark of Thomas Bullesdon, who died in 1510; unfortunately the six bells sold to St. Sepulchre's were melted out at the Great Fire of London in 1666.

Appended to this paper is a list of the priors and rectors, and although it is not complete it contains the names of five priors in addition to those in any previously published list, and many added and corrected dates.

There is no cartulary of the priory from which to obtain a complete list.

Of the rectors, only the first, Sir John Deane, need be referred to here. He held the degree of S.T.P. and was a prebendary both of Winchester and Lincoln. A native of Davenham, co. Chester, he had been appointed by the prior of St. Bartholomew's to Little Stanmore on a stipend of £6 13s. 4d. a year. At the time of the dissolution in 1539 he was parish priest at St. Bartholomew's, and so continued during the demolition of his parish chapel and of the nave of the priory church. In 1544 he was appointed by Henry VIII. the first rector of the parish church of "St. Bartholomew the Apostle the Great," a stipend being granted him by the Court of Augmentations of £8 a year. He so continued during the reign of Edward VI. In 1556 Queen Mary revived the priory, putting in the Dominican Friars, but Sir John Deane went on just the same, for later in that year he signs himself, when witnessing the will of a dying parishioner, as "John Deane, parson of Greate Seynt Barthilmews." In 1557 he founded the free grammar school of Witton, at Northwich, co. Chester, but he remained rector in Queen Elizabeth's reign after the Black Friars had departed, and dying in 1563 was buried opposite to Rahere on the south side of the presbytery, where the scholars of his Witton school laid a brass to perpetuate his memory in 1893. He was an interesting link connecting the old regime with the new.

^a Vestry Minute Book, Feb. 1815, p. 344. As its weight was only 104 lbs. it may have been a "Sanctus" bell.

THE PRIORY OF ST. BARTHOLOMEW AND THE PARISH CHURCH
OF ST. BARTHOLOMEW THE GREAT, WEST SMITHFIELD.

AUGUSTINIAN PRIORS.					Priory revived, Easter, 2 & 3 Philip and Mary	
Rahere	1123	to	1144			1556
Thomas	1144	to	1174			
Roger	about 1174					
					DOMINICAN PRIOR.	
Richard	here 1202	and	1206		William Perrin, S.T.P.	1556 to 1558
G. of Osney	1213		1213		Priory suppressed, 13th July, 1 Elizabeth	1559
John	here 1226	to	1232		RECTORS.	
Gerard	1232	here	1241		John Deane, { parish priest 1539 to 1544	
Peter le Duc	1242	to	1255		S.T.P. { rector	1544 to 1563
Robert	1255	here	1259		Ralph Watson	1565 to 1569
Gilbert de Weledon	1261	here	1263		Robert Binks	1570 to 1579
John Bacun	1265				James Stancliffe, M.A.	1581 1581
Henry	—		—		John Pratt	1582 to 1587
Hugh	here 1273	to	1295		David Dee, M.A.	1587 to 1605
John de Kensington	1295	to	1316		Thomas Westfield, D.D., } 1605 to 1644	
John de Pekenden	1316	to	1350		Bishop of Bristol	
Edmund de Broughyng	1350	to	1355		John Garrett, M.A.	1644 about 1655
John de Carleton	1355	to	1361		Randolph Harrison, D.D.	
Thomas de Watford	1361	to	1382			here 1655 ^b to 1663
William Gedeney	1382	to	1391		Anthony Burgess, M.A.	1663 to 1709
John Eyton, alias Repyng- don, S.T.P. ^a	1391	to	1404		John Poulteney, M.A.	1709 to 1719
John Watford	1404	to	1414		Thomas Spateman, M.A.	1719 to 1738
William Coventre	1414	to	1436		Richard Thomas Bateman	1738 to 1761
Reginald Colier	1436	to	1471		John Moore, M.A.	1761 to 1768
Richard Pulter	1471	to	1480		Owen Perrott Edwardes, M.A.	1768 to 1814
Robert Tollerton	1480	to	1484		John Richard Roberts, B.D. . . .	1814 to 1819
William Guy	1484	to	1505		John Abbiss, M.A.	1819 to 1883
William Bolton	1505	to	1532		William Panckridge, M.A.	1884 to 1887
Robert Fuller, abbot of Waltham	1532	to	1539		Sir Borradaile Savory, Bart., M.A.	1887
Priory suppressed, 25th October, 31 Henry VIII. . . .			1539			

^a A "Simon Wynchecombe, prior of St. Bartholomew's, Smithfeld," occurs as an executor in Pat. Roll. 16 Richard II. pt. iii. m. 20 and m. 19 (1392 and 1393); possibly he was acting as prior in the absence of John Eyton, who occurs again in 1394, and died prior in 1404.

^b Signed a lease of a glebe house as rector in 1655 though only inducted formally as rector in 1660.

XX.—*The Prehistoric Tombs of Knossos.* By ARTHUR J. EVANS, *Esq., Litt.D.,*
F.R.S., F.S.A.

Read 19th January, 1905.

I.—THE CEMETERY OF ZAËR PAPOURA: WITH A COMPARATIVE NOTE ON A
CHAMBER-TOMB AT MILATOS.

§ 1. *The Types of Sepulture.*

ABOUT 600 metres due north of the prehistoric Palace of Knossos begins the rise of a flat-topped hill, here traversed by a long line of Roman walling, from which the neighbouring hamlet, sole survivor of the ancient city, gains its name of Makryteichos. The hill itself is known as Zafer Papoura (Τοῦ Ζαφῆρ ἡ παποῦρα) and on its lower slope there had already been brought to light remains of houses belonging to the extensive Minoan town, the "Wide Knossos" of Homeric tradition, which seems to have extended on every side of the Palace.

That this hill might contain a Minoan cemetery was rendered the more probable by Mr. Hogarth's discovery in 1900 of eight isolated tombs along a low cliff-edge on its further side.^a Seven of these tombs contained Geometric interments, but their chamber shape and rock-cut entrance passage or *dromos* showed that they had originally belonged to an earlier period. Some scattered relics of their original contents were in fact found, such as bronze knife-blades^b and a

^a *Annual of the British School at Athens*, No. vi. p. 82, *seqq.*

^b From Tomb 4.

bronze tripod,^a of a form identical with one found at Enkomi in Cyprus, in a Late Mycenæan connexion. The remaining tomb,^b a vaulted chamber 8 feet square, approached by a *dromos* 16 feet long, contained disturbed remains of its original Minoan contents, without any Geometrical admixture. Parts of a male skeleton were scattered on the floor just within the tomb. Fragments of five painted Mycenæan vases, including a large squat *aryballos* in greenish ware with black spiraliform ornament, were found in the tomb, and parts of two bronze depilatory tweezers. Hardly covered by the earth, just outside the entrance to the *dromos*, lay another skeleton accompanied by a bronze mirror and a small object in blue paste with rosettes in relief.

Mr. Hogarth searched in vain for more Minoan tombs along the cliff face to the south,^c and these indications of early interments remained isolated till in 1904 the renewed explorations, made under my direction in quest of a burial place in connexion with the prehistoric town, led to the discovery of an extensive cemetery on the eastern slope of the hill. The credit of finding the first tombs here was due to my mender Joannes Papadakis, and the successful tracing out of the ramifications of the necropolis was mainly owing to the extraordinary *flair* of the foreman Antonios Gregoriou, who had also worked here for Mr. Hogarth, and whose life-long application to this congenial pursuit on early Cypriote sites has made him probably the most expert tomb-hunter of the Levant.

I was fortunate both here and on the site of the Royal Tomb subsequently explored in having the expert assistance of Dr. Duncan Mackenzie in directing the works, and have also had at my disposal his daybooks of the excavations. The objects illustrated below were for the most part drawn by the Danish artist Mr. Halvor Bagge.

The eastern slope of the hill along which the cemetery extends is composed of soft rock, a kind of rotten limestone, locally known as *kouskouras*, in most places covered with a very shallow deposit of surface soil. Wherever there had been an ancient shaft or the cutting of a tomb-passage this deposit was naturally deeper, and it was thus possible in many cases to locate the graves from the occurrence of certain herbs with exceptionally long roots.

In all a hundred tombs were opened. Of these a small proportion may be

^a From Tomb 3.

^b *Op. cit.* p. 82, No. 1. The tomb had been originally closed by a door of dry walling.

^c Mr. Hogarth concludes (*op. cit.* p. 85): "The native diggers seem never to have found graves earlier than Geometric; and after a two months' search I fear I leave the solution of the Knossian cemetery problem but little advanced."

brought within the limits of the period when the great neighbouring Palace still existed as a royal abode and was exercising a dominant influence. But the bulk of the tombs unquestionably belong to the age immediately succeeding this, when the Palace itself was in ruins or was at most partially inhabited. In the main therefore the remains here brought to light illustrate what I have elsewhere found it convenient to define as the Third Late-Minoan Period, though, as will be pointed out below, they do not seem to reach its lower limit.

The tombs, which in this cemetery all contained skeleton interments, were of three main classes: (a) *Chamber-Tombs* excavated in the soft rock with a passage or *dromos* leading down to them; (b) *Shaft-Graves*, each with a lesser cavity below, roofed over with stone slabs and containing the extended skeleton; and (c) *Pit-caves* or oblong pits giving access to a walled cavity in one of their larger sides below, within which was the interment. From the character of their contents it appears that all these three forms of sepulture were in use contemporaneously.

(a) *The Chamber-Tombs.*

Rock-cut tombs of this class, approached by a *dromos*, are sufficiently well known both in Crete and in Mainland Greece. In contrast to some previously known Cretan tombs of this type that exhibit a round,^a horse-shoe,^b or oval ground plan, the shape of these generally showed below an approach to a square outline, the upper part forming a low cupola or arch. This square form, which was prevalent in the contemporary cemeteries of Mainland Greece,^c is also well authenticated on other Cretan sites.

It is found in the case of built tombs at Praesos,^d and at least one example of a square rock-cut chamber occurred at Phaestos.^e In 1899 I already had the opportunity of exploring a chamber-tomb of rectangular outline at Milatos in

^a E.g. the chamber-tomb of Anoja Messaritika described by Orsi (*Mon. Ant.* i. (1890), 6).

^b At Prinies, A. Taramelli, *Ricerche archeologiche Cretesi*: *Mon. Ant.* ix. (1899), 49; Palaikastro, Bosanquet, *B. S. A.* viii. 304; Milatos, Orsi, *op. cit.* 10; Praesos, Bosanquet, *B. S. A.* viii. 251, 252.

^c Those, for instance, of the Lower Town at Mycenae, cf. Tsountas, 'Εφ. 'Αρχ. 1889, p. 121 *seqq.*; οἱ θάλαμοι εἶναι εἰς τὸ πλεῖστον τετράγωνοι (p. 128). Cf. 'Εφ. 'Αρχ. 1891, p. 2 *seqq.* The round form is, however, also found. See Tsountas and Manatt, *Mycenæan Age*, 135.

^d Bosanquet, *B. S. A.* viii. 245, 246.

^e Savignoni, *Necropoli di Phaestos*, 31, fig. 17. This tomb was, however, of an exceptional character, since it included a second chamber of pentagonal form.

Crete, the plan and arrangement of which is given below for purposes of comparison.^a

It is true that in many cases the corners of the chambers are rounded, and in some of the smaller tombs a more circular outline is observable.^b That the round or elliptical form of chamber-tomb is typologically the earlier must be regarded as certain. It is the natural form of the artificial cave dwellings of a far more primitive age, of which these sepulchral abodes are simply the survival. Large, built *tholi* of this class, constructed of rough stones, were, as we now know, used as ossuaries in Crete at a much earlier period.^c

In the case of the built tombs or *tholi* of Mycenæan Greece, the rounded form is still generally adhered to. In Crete, however, the square outline is found, as at Praesos, also in the built sepulchral chambers, and a still more striking example from the neighbourhood of Knossos will be described below.

The chambers of the tombs of Zafer Papoura were in each case entered by a doorway, generally blocked by a double or threefold walling of rough stones. This door was approached by a rock-hewn *dromos* or passage somewhat wider than the doorway, and sloping down to it with steps at intervals. (See figs. 1 *a, b, c*, Grave No. 92.) The *dromos* was continued below in many cases as a tunnel, and its walls sloped inwards so as to form a section like the galleries in the walls of Tiryns. The sides of the doors were also slightly battered in the same way. Fig. 2 gives a view of the entrance passage of Tomb 92, the open door of which was immediately approached by steps. These lie beyond the end of the slope visible in the illustration.

The entrance to the *dromos* was in almost all cases from the east, but this orientation was practically necessitated by the fact that the slope of the hill was here throughout in an easterly direction. The tombs found on the other side of the hill opened, as naturally, on the west. Neither can it be said that there was any fixed arrangement as to the interments within the chambers. The

^a See below, figs. 104*a* and 104*b*.

^b See below, fig. 84.

^c One of these was excavated by Professor Halbherr at Hagia Triada in 1904. See *Memorie del r. Istituto Lombardo*, 1905. Others have now been brought to light by the Cretan Ephor of Antiquities, Dr. Stephanos Xanthoudides, at Kumasa. The objects contained in these primitive *tholi* belong to what I have elsewhere defined as the Second and Third Early-Minoan Periods, which precede the great age of the Cretan Palaces. There can be no doubt that the Hagios Onouphrios deposit (*Cretan Pictographs, etc.*, Quaritch, London, 1905, p. 105 *seqq.*) represents the contents of an ossuary *tholos* of this early class.

skeletons found on the floors, in a more or less extended position, sometimes had

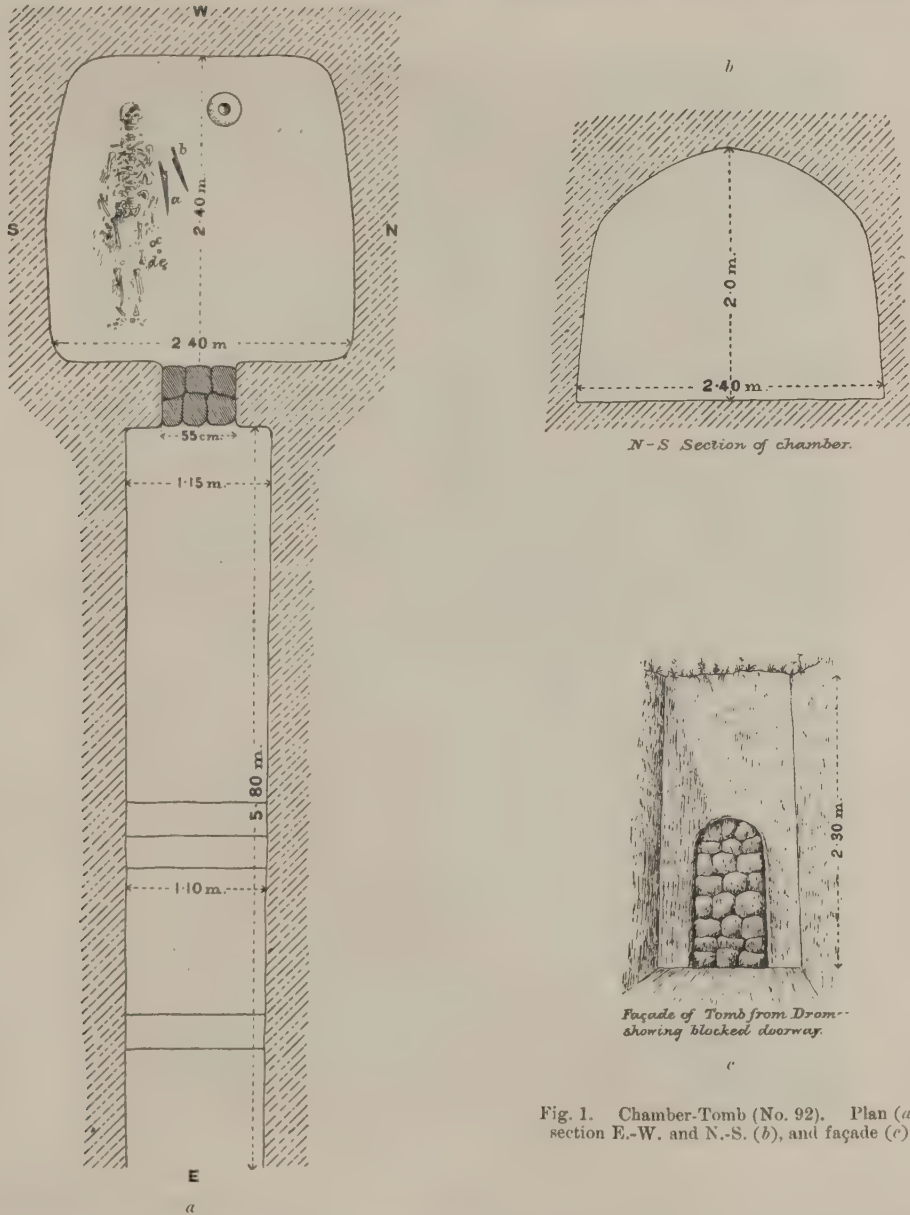


Fig. 1. Chamber-Tomb (No. 92). Plan (a), section E.-W. and N.-S. (b), and façade (c).

their heads near the inmost wall, sometimes towards the door, while at times they lay at right angles to the entrance.

From one to three skeletons lay on the floors of these chamber-tombs. In other cases, according to the well-known Cretan practice, the bones were con-



Fig. 2. Entrance passage of Tomb 92.

tained in terra-cotta chests, known as *larnakes*.^a Fig. 3a shows one of these in

^a These sepulchral chests were first described by Paolo Orsi (from materials supplied by Federico Halbherr) in his *Urne Funebri Cretesi* (*Mon. Ant. i.* 1890).

position, through a broken doorway of Tomb 93. A fuller view of this *larnax* is given in fig. 3b.



Fig. 3a. *Larnax* or clay sarcophagus seen in position through the broken doorway of Tomb 93.

At times, again, the two usages of the simple deposition of the body on the floor of the tomb and of its enclosure in a clay chest had been practised side by

side. In one instance (the large tomb No. 14) the bones had been placed in a shallow pit dug in the floor of the chamber.

The *larnakes* of these Late-Minoan graves, like the alternative clay baths ^a



Fig. 3b. Clay sarcophagus or *larnax* from Tomb 93.

^a Orsi, *Urne Funebri Cretesi*, Tav. ii. and p. 11.

or store jars,^a also used as receptacles for the corpse, reproduce the ordinary chests of household furniture,^b and were not, as has been suggested, miniature copies of primitive houses.^c They are in fact, as I have elsewhere pointed out,^d little more than translations into painted clay of the wooden chests that played an important part in the furniture of contemporary Egyptian houses, and which also



Fig. 4. Remains of crouched skeleton in *larnax* from Tomb 80.

at times served a funereal purpose. The painted designs of the Cretan sarcophagi very frequently stand themselves in a filial relation to those seen on Egyptian chests, ceilings, or wall paintings. Thus we find on the painted *larnax* of Grave No. 100 the conventionalised papyrus tufts and linked spirals alternating with

^a Mariani, *Antichità Cretesi* (*Mon. Ant.* vi. 203). Cf. too *American Journal of Archaeology*, v. (1901), 304.

^b S. Xanthoudides, 'Εφ. 'Αρχ. 1904, p. 12 *seqq.*, has rightly insisted on this fact. That some were made specially for sepulchral purposes is, however, shown by the holes below for drainage.

^c Tsountas, 'Εφ. 'Αρχ. 1891, p. 7 *seqq.*; Perrot, *Grèce Primitive*, p. 678 *seqq.*

^d *The Palace of Knossos in its Egyptian Relations* (Arch. Report of Egypt Expl. Fund, 1901), 3.

flowers according to the Egyptian fashion. On a clay sarcophagus from Ligortino^a we recognise the typical Nilotic motive of waterfowl chasing butterflies among marsh plants; and the sacred griffin, also seen on Egyptian chests, reappears on the *larnax* of Palaikastro,^b with a derivative Nile plant rising in front of him.

The narrow capacity of these clay chests has given rise to the idea that they were simple ossuaries, and that the bones had been placed in them after the decomposition of the flesh. Where, as is sometimes the case, more than one skull occurs inside the chest, there may be some warrant to this idea, but evidence like that afforded by the *larnax* found in Grave No. 80 below, shows that the body of the deceased was actually stowed away in the clay receptacle.

Fig. 4, which reproduces a photograph of the interior of this chest immediately after its extraction from the sepulchral vault, shows that the body had been originally laid on its back, with the knees drawn up.

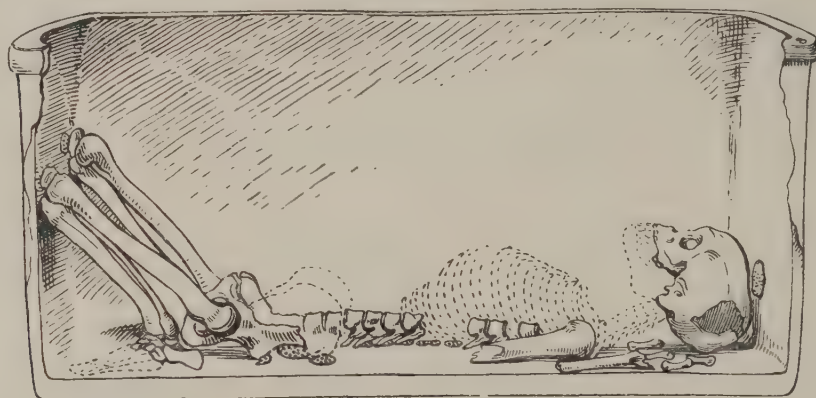


Fig. 5. Section of *larnax* from Artsä, showing position of skeleton.

This is still more clearly demonstrated by a *larnax* found by Dr. Xanthoudides at Artsä,^c a Cretan village about two hours distant from the site of Knossos. In this exceptionally well-preserved burial the skeleton was found lying on its back as in the above instance, and with the knees still resting against the end wall of the clay chest, as shown in fig. 5.

^a *The Palace of Knossos in its Egyptian Relations* (Arch. Report of Egypt Expl. Fund, 1901), 3.

^b Bosanquet, *B. S. A.* viii. 297 *seqq.* and pl. xviii. The introduction of these Egyptian elements does not, however, detract from the religious significance of the indigenous features, such as the sacral horns and double axes, of this sarcophagus. Minoan religious art was accretive, and in Crete, as in contemporary Syria, such hieratic forms, taken over from the land of fixed and immemorial religious tradition, became part of its common stock.

^c 'Fφ. 'Aρχ. p. 6 *seqq.* and fig. 1 (reproduced in fig. 5 above).

(b) *The Shaft-Graves.*

This type of tomb, of which twenty-eight examples were found, recalls in its general plan the shaft-graves of the Akropolis enclosure at Mycenae. In both cases the access is by means of a shaft or pit leading down to the slabbed covering of the actual sepulchral cell. The cell here, however, is a simple cavity in the rock made somewhat narrower than the shaft above so as to leave a ledge for the support of the covering slabs. In the royal shaft-graves of Mycenae this ledge

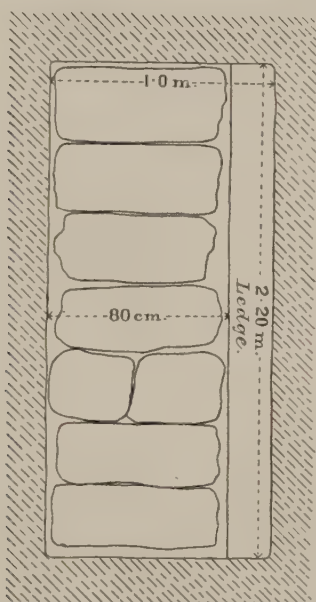


Fig. 6. Plan of Grave No. 27, showing covering slabs and ledge at side.

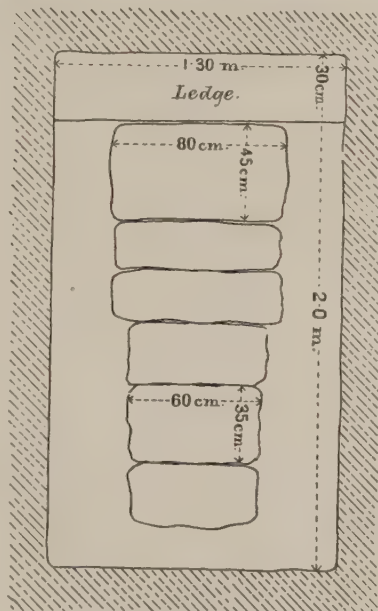


Fig. 7. Plan of Grave No. 26, showing covering slabs and ledge at end.

was supplied by means of an artificial walling, and the slabs themselves rested on substantial beams. In its simplest form, a pit leading to a grave covered with rough stones, this type is already found in the early Copper Age cemeteries of Cyprus.

The depth of the shaft proper, in the graves of Zafer Papoura, when the surface was not denuded, ranged from about 2 metres to $3\frac{1}{2}$ metres. The sepulchral cells went down about a metre below this depth, and were made just large enough to contain the extended body. In many cases a ledge was cut in the side or end of the shaft to aid in the descent below. The covering blocks varied in character. (See figs. 6 and 8b). Sometimes they were quite rough stones; in other cases they

were carefully hewn and squared. The best executed slabs were found in Grave

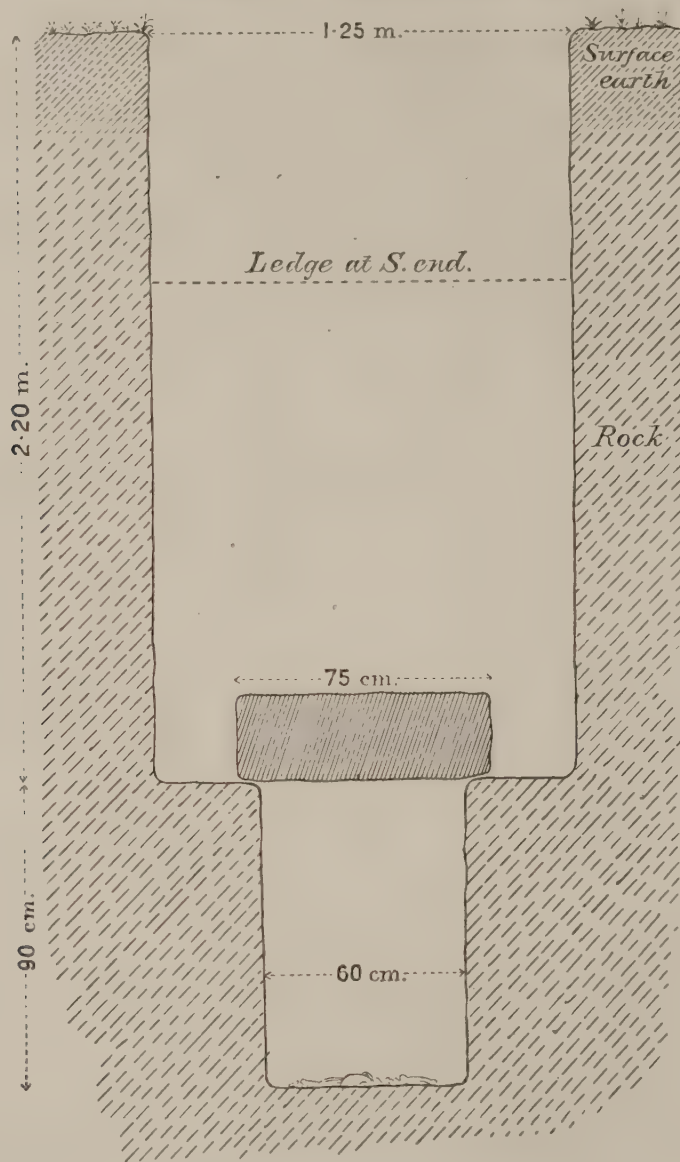


Fig. 8a. Section of Shaft-Grave (No. 33)

No. 44, which contained two fine swords. There were four of these slabs in this

tomb, identical in size and thickness to a few centimetres.^a The plan and section of a typical shaft-grave, the Carpenter's Grave, No. 33, is given in fig. 8a, b.

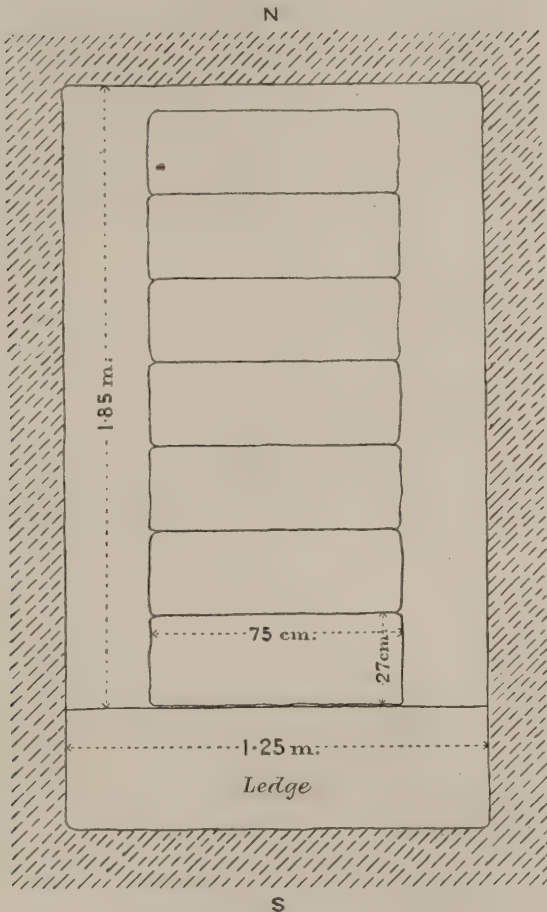


Fig. 8a. Plan of Shaft-Grave (No. 33).

It is, however, highly probable that had such existed they would, from their superficial position, have been removed or broken up.

^a The dimensions of these were: No. 1, 1.35 long by .57 wide by 27 thick; No. 2, 1.20 long by .55 wide by 27 thick; No. 3, 1.27 long by .56 wide by 27 thick; No. 4, 1.19 long by .50 wide by 33 thick.

^b They belong to a class of signs which in the later Palace are seen only on re-used blocks, They are also found at Phaestos. (L. Pernier, *Scavi della Missione Italiana a Phaestos*, 1900-1901. p. 90, Nos. 9 and 15). No. 1 also occurs in the pictographic script.

Blocks had been occasionally taken for this purpose from older constructions. This appears from a slab found in Grave No. 25, containing a late stirrup-vase, upon the upper surface of which were the deeply cut signs shown in fig. 9. These signs might easily be taken by those not intimately acquainted with the history of such marks in Crete as characters of the Minoan script, giving the name of the person here interred.



Fig. 9. Incised signs on slab of Grave No. 25.

As a matter of fact the two signs in question belong to the regular series of marks on blocks from the earlier Palace at Knossos,^b and to a period therefore long anterior to that of the grave which the block had helped to cover.

At times the pit above the slab was found partly filled with large stones, but nothing resembling a gravestone was discovered above.

The exceptionally rich Shaft-Grave No. 36 presented the peculiarity of having part of the funeral furniture above the slabs. The remains of the skeleton,

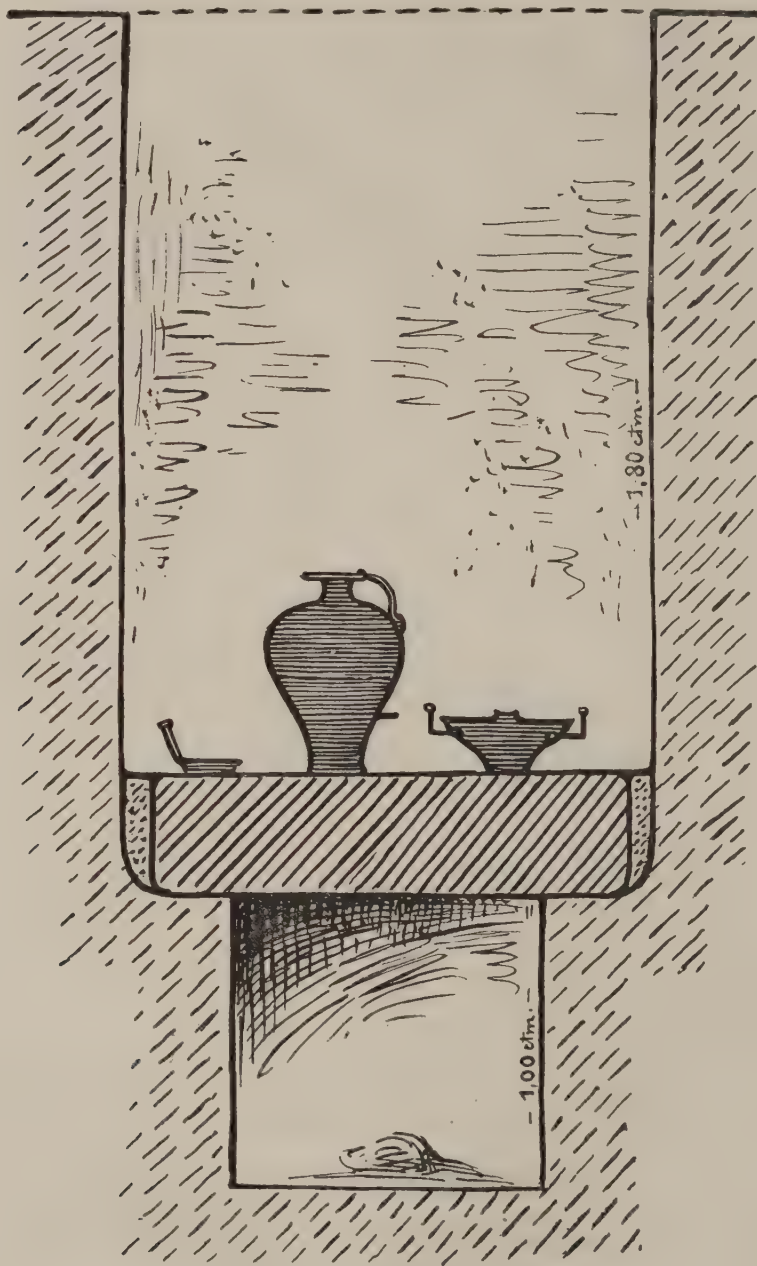


Fig. 10. Section of Shaft-Grave (No. 36).

with personal ornaments and two swords, one of them gold-mounted, lay in the sepulchral cell below, while above the roof-slabs had been placed three bronze vessels, a mirror, and two spear-heads. The reason of this exceptional arrangement was probably the impossibility of fitting all these belongings into the receptacle below. A section of this tomb is given in fig. 10.

Another abnormal variety of this class of interment is supplied by No. 34. In this case there was the usual pit with the slabs below covering the sepulchral cell, but immediately below them was a plain clay *larnax*, which formed the actual receptacle of the bones.

(c) The Pit-Caves.

The graves of this class consist of a pit provided with ledges to facilitate descent, at the bottom of which is a low walled-up arch giving access to the sepulchral cell. This inner cave-like receptacle was generally secured by a double walling of rough blocks, and was just long enough to contain an extended skeleton. Although thus approached on a different principle, the inner cell in ground plan resembles that of the shaft-graves.

A typical example of a pit-cave will be seen in figs. 11*a*, 11*b*, and 11*c*, representing the ground plan and sections of Grave No. 66.

The depth of the pit leading down to the walled cavity varied from about 2½ metres to nearly 4½ metres. Owing to the greater difficulty of access to the sepulchral cell, as compared with the simple shaft-grave, the system of ledges along the pit sides was much more developed in this class of tomb. A shallower form of the same class (No. 7) is shown in figs. 12*a* and 12*b*.

Although built *tholos* tombs approached by a circular pit or well, of very late Minoan date, are seen in the cemetery of Courtes,^a the present type of pit-cave is altogether new among contemporary sepultures either in Crete or in Mycenæan Greece.

There is, however, sufficient evidence of its high antiquity in the Mediterranean area. Under a more primitive aspect sepulchral cavities approached by a pit are seen in the early cemeteries of Cyprus,^b such as Hagia Paraskevê, and

^a A Taramelli, *Notes on the Necropolis of Courtes* (American Journal of Archaeology, v. (1901), 294 *seqq.* and 297, 298 (figs. 1 and 2).

^b These early Cypriote pit-caves were first described by Dümmler, *Mitth. d. d. arch. Inst. in Athen*, 1880, p. 210 *seqq.* For numerous examples see Ohnefalsch-Richter, *Kypros, etc.* pl. clxvii.-clxxv.

they recur on the Syrian mainland. Tombs of this class, described as Punic, are

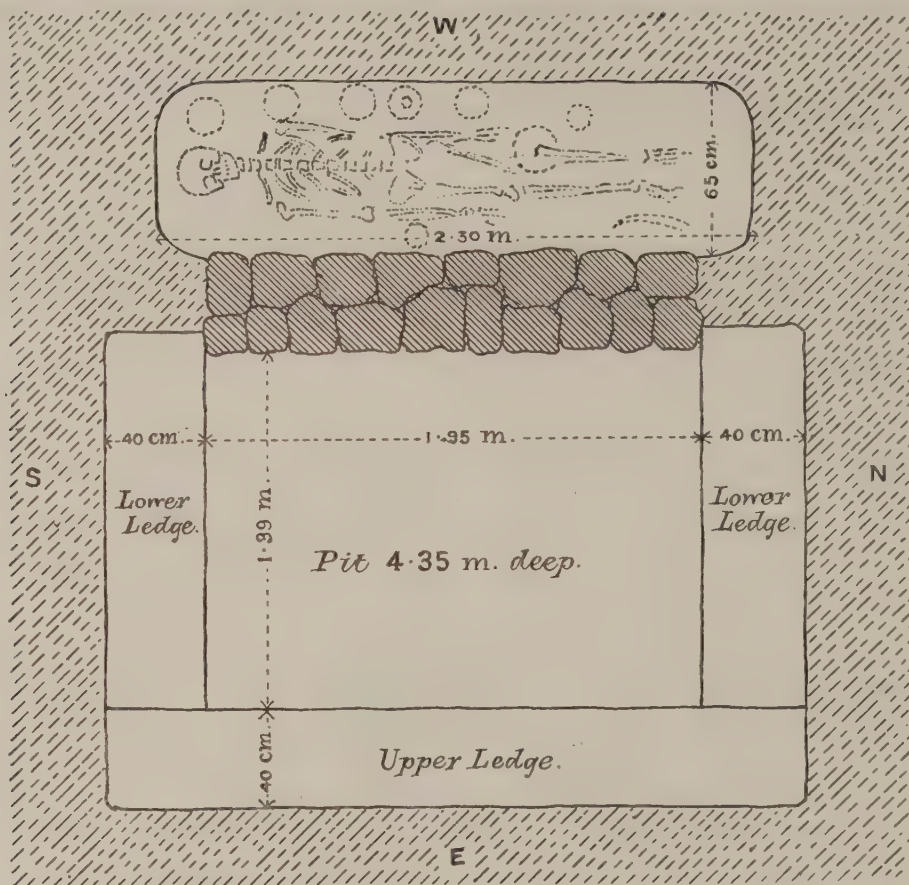


Fig. 11a. Plan of Pit-Cave (No. 66).

also found in Tunisia.^a An allied type is well represented in south-western Sicily^b and in the neighbourhood of Palermo.^c In this case the pit is circular

^a I have seen tombs of this class near Beja (Vacca). The pits were square, the side cavities had in several cases been enlarged for later uses. Some of these tombs were excavated by Captain Vincent (*Bulletin de l'Académie d'Hippone*, xvii.).

^b See especially L. Mauceri, *Annali*, etc. 1880, 1 seqq. (Districts of Licata and Canicatti). For the identity of the early ceramic types of south-western Sicily with those of the south-east, see Orsi, *Bull. di Paletnologia*, 1895, p. 80 seqq. and cf. 1897, p. 1 seqq.

^c Salinas, *Notizie degli Scavi*, 1880, p. 357, and tav. x. These tombs were on the extensive plain of Ciachia, and as Colini (*Bull. di Paletn.* 1904, p. 176) points out, the well form of access was here conditioned by the flat character of the surface.

and there are at times two or even three side cavities. The ceramic contents of these tombs belong to Orsi's First Sikel Period. Well-caves of this kind also frequently occur in the district of Syracuse during the succeeding Second Sikel

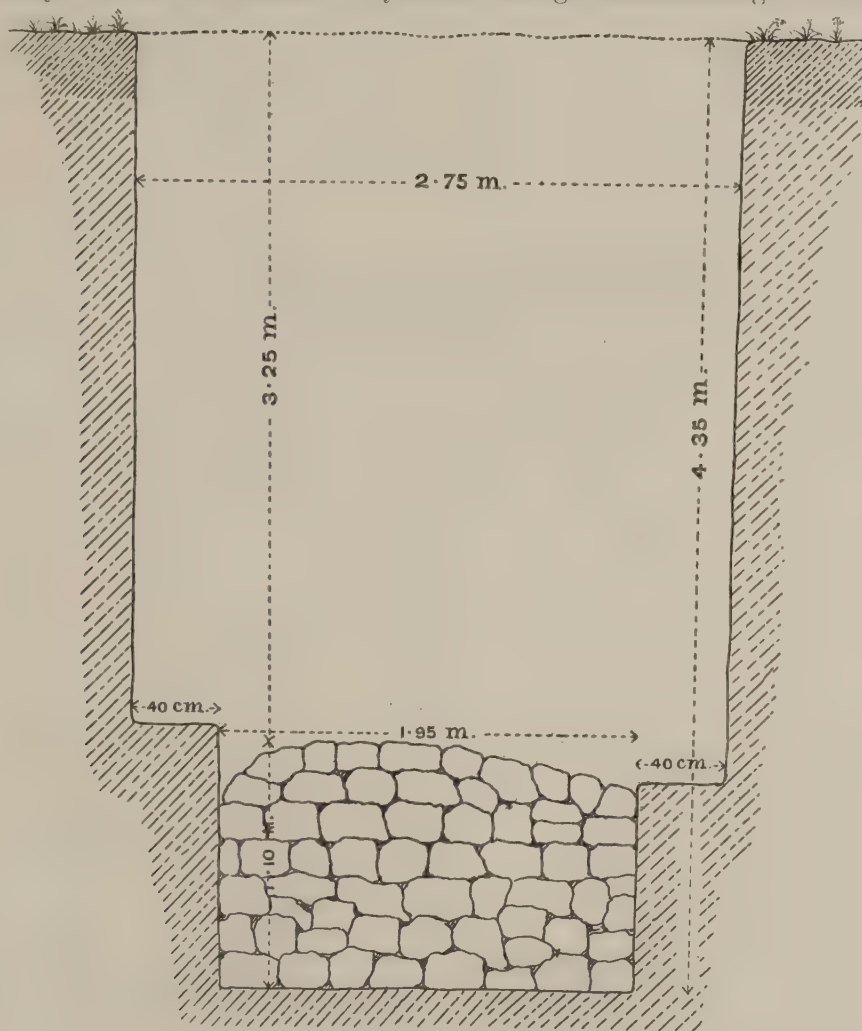


Fig. 11b. Longitudinal section of Pit-Cave (No. 66).

Period,^a contemporary with the Late Minoan, and reappear in Apulia among what may well have been a population of the same Sikel stock.^b

^a Colini, *loc. cit.*

^b See G. Patroni, *Un villaggio siculo a Matera nell'antica Apulia* (*Mon. Ant.* 1898, p. 417 *seqq.*; cf. figs. 24, 25).

In localities presenting natural cliffs or steep slopes the simpler kind of artificial cave with an entrance passage more or less on the same level was the natural type for the dwellings of primitive troglodytes, as later for the abodes of

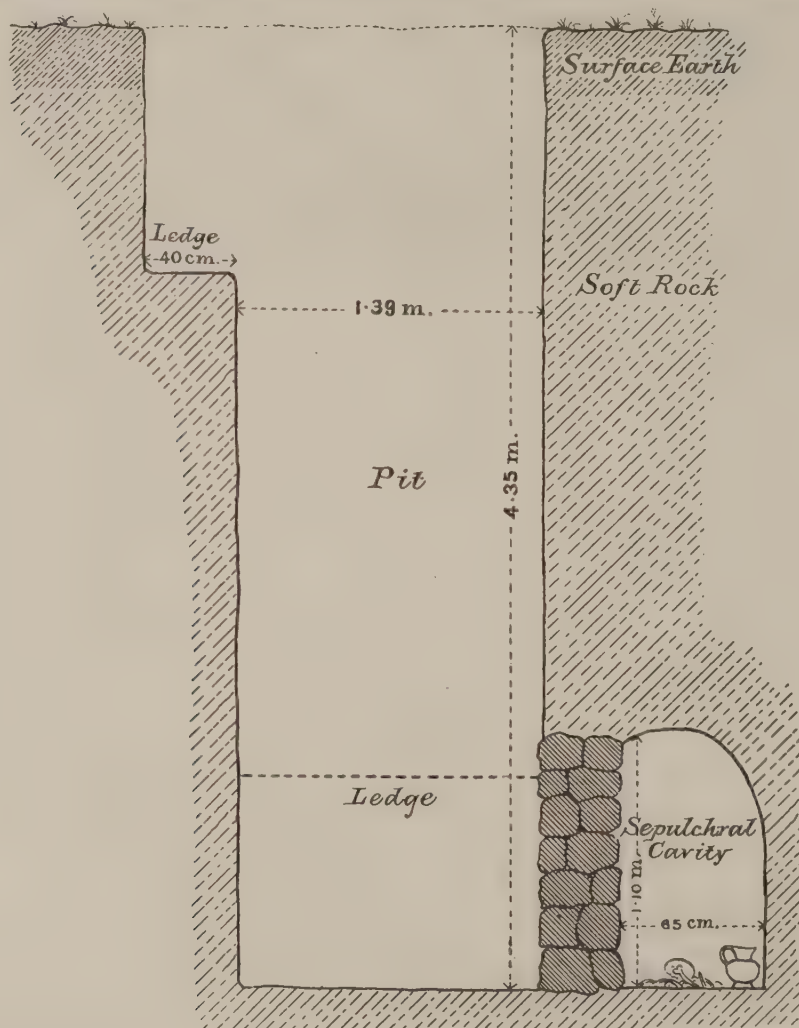


Fig. 11c. Transverse section of Pit-Cave (No. 66).

death. It is this type that we have represented in the chamber-tombs described above. But on more level sites a similar result was attained by the more laborious process of first digging a pit and then excavating a small chamber in its side.

The present class of tomb originates therefore in the same troglodytic instinct that produced the chamber tombs and *tholoi*, and the pit here is the equivalent of the *dromos*. The cavity itself, being less easily accessible, would tend from the first

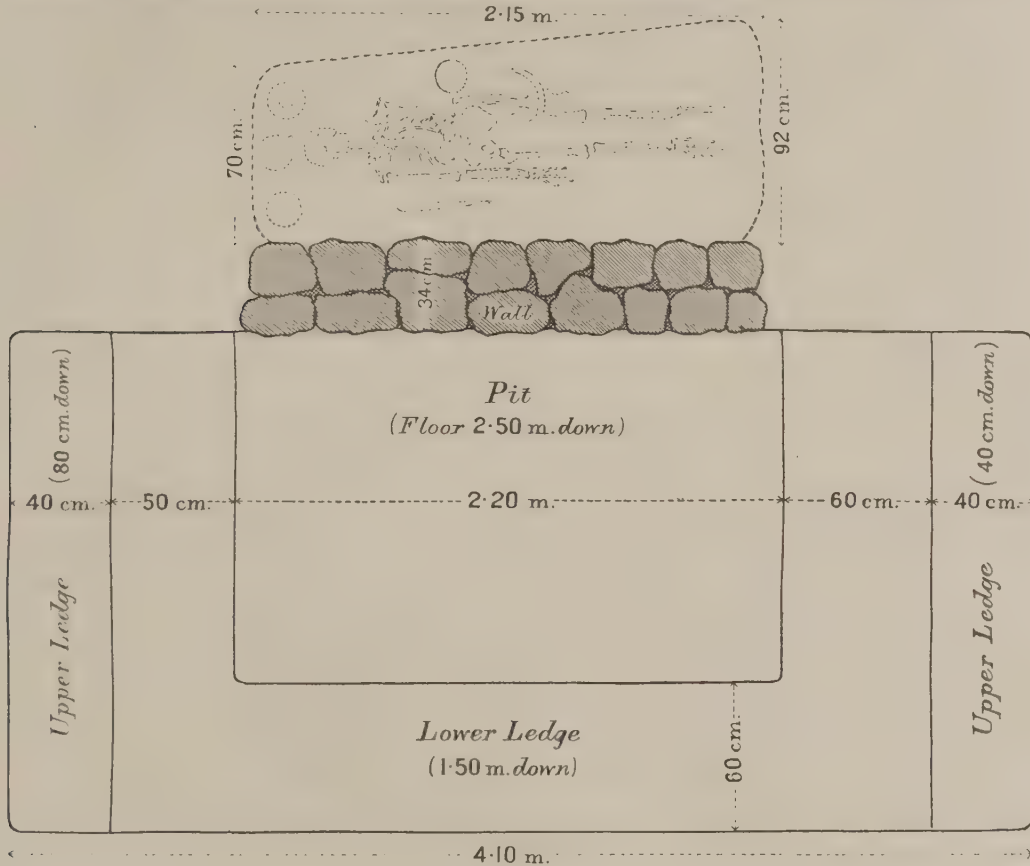


Fig. 12a. Plan of Pit-Cave (No. 7).

to be smaller than that of the other class, and in the present sepulchral type it is reduced to a mere cell.

Considerations like the above lead to the conclusion that the differences of sepulchral type visible at Zafer Papoura are ultimately due to topographical causes. It must at the same time be observed that the three distinct forms of

graves that we see here represent fixed and thoroughly developed types that must have had a long independent history, and are not merely slight modifications of a single prevalent form, due to local convenience. As a matter of fact the character of the ground at Zafer Papoura does not vary sufficiently to explain the divergence in the types of graves. It is true that the tombs of the different classes are to a certain extent distributed in groups, the south-east part of the area being for instance exclusively occupied by chamber-tombs, while some

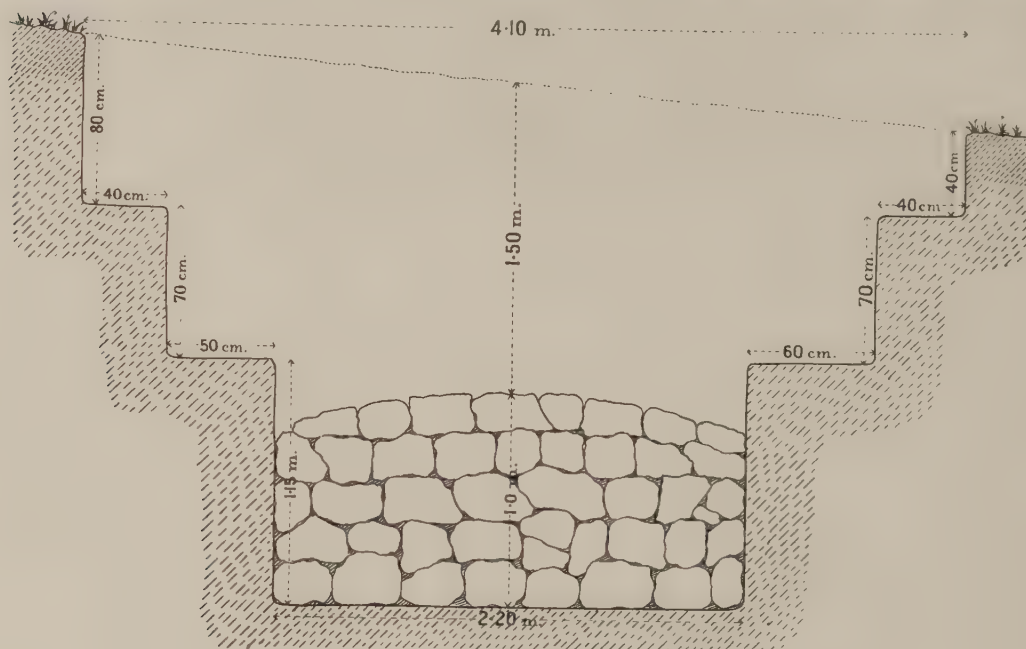


Fig. 12b. Longitudinal section of Pit-Cave (No. 7).

clusters of shaft-graves and pit-caves occur together in the northern section. (See plan, fig. 108.) In this latter area, however, chamber-tombs are also found, and in one case a shaft-grave has been dug above and partly into a slightly earlier chamber-tomb, while chamber-tombs of somewhat later date have in two instances invaded pit-caves.

There was then no inherent reason for this divergence of type to have produced itself on the present site. We must rather suppose that we have here to deal with three principal groups of families or clans who in the course of their past history had had to deal with different topographical conditions. Some, it

appears, must have come from a flatter country. Whether their different antecedents ultimately imply in one or the other case an immigration from over sea is a question impossible to answer with our present data. It is certain, as will be shown in detail below, that all three types of interment were practised at Zafer Papoura contemporaneously, and that the culture presented by the contents of graves of the different kinds is of an uniform and purely Minoan stamp.

Unfortunately the character of the soil has left little material for craniological observations. The bones were mostly in a very decayed state, and it was often with the greatest difficulty that sufficient data could be made out even to determine the sex of the skeletons.^a Even in cases where the bones had been placed in clay sarcophagi these had been generally so broken and choked by the falling of the rotten *kouskouras* rock that very little remained in a sufficient state of preservation for comparative purposes.^b

§ 2. *The Graves of Zafer Papoura and their contents.*

No. 1.—This grave was of abnormal form, and seems to have been a double shaft-grave. It is situated on a steep bank, and much of the original deposit above it had probably disappeared. There are two compartments, divided by a dry walling. The bottom of that to the west was 60 centimetres higher than the other, but owing to the slope it lay at about the same distance, 1·65 meters below the surface. This compartment (A in plan, fig. 13) was found completely empty. B, however, had its original covering of rough slabs, sloping up west towards the companion grave. Beneath these lay the much-decayed remains of an extended skeleton, with its head to the south. By the head were the two vases *a* (see fig. 118, 1*a*) and *b*, and near the left forearm and hand two bronze knives and a stone hone.

1*a*. Plain ewer : height 25 centimetres. (See fig. 118, 1*a*.)

^a Some of the legs for instance may have been more bent than is shown in the rough indications of skeletons in the plans of tombs given below. These indications, it should be observed, are only intended to have a diagrammatic value, the skeletons being in almost all cases reduced to too pulverised a condition to admit of any exact delineation.

^b Mr. C. H. Hawes, who has been carrying out extensive craniological observations in Crete on behalf of the British Association, has kindly consented to examine the skulls from this cemetery and from the Royal Tomb.

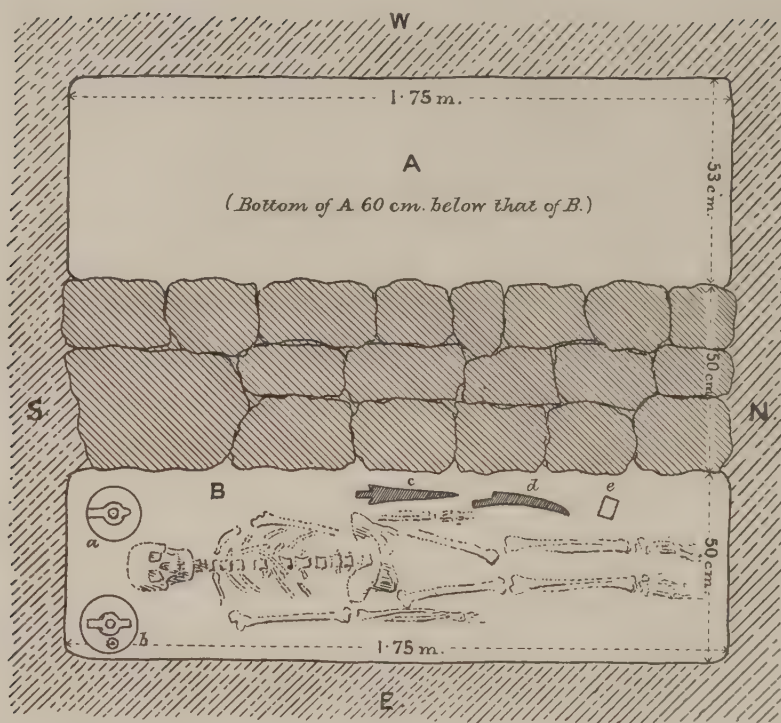


Fig. 13. Plan of double Shaft-Grave (No. 1).



Fig. 14. Painted stirrup-vase from Grave No. 1.

1b. Stirrup-vase: height 19 centimetres; brown decoration on pale buff. (Fig. 14.)

1c. Bronze knife: length 12 centimetres. (As 51f, fig. 113.)

1d. Bronze knife: length 11.8 centimetres, with undulating edge. (Fig. 15.)

1e. Flat oblong hone of gray stone.

No. 2. Small *Shaft-Grave*, with covering slabs.—Scanty remains of bones; head, east. About the middle, near the position of the right hand, was a small gold ring, glass and clay beads, and small serpentine pendant.

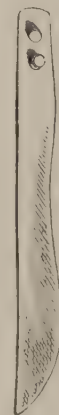


Fig. 15. Bronze knife from Grave No. 1.

- 2a. Gold ring, the bezel broken.
- 2b. Bead of yellow translucent glass, with rounded section and large central perforation.
- 2c. Globular ribbed bead of blue paste (kyanos).
- 2d. Plain globular beads of clay.
- 2e. Green serpentine pendant of globular form, with perforated stem.

No. 3. *Shaft-Grave*.—Rectangular pit, 1·25 metres wide and about 1·90 metres long, in which at a depth of about 2·15 metres is the actual grave, with a roofing of rough limestone slabs.

The grave (1·60 metres long, 60 centimetres wide, and 55 centimetres deep) contained remains of a skeleton with the head to the south. At the feet were a bronze knife and a razor.

- 3a. Bronze knife (29·5 centimetres long). For type see fig. 113, 64c.
- 3b. Bronze razor (19 centimetres long, 5·5 centimetres broad at end).

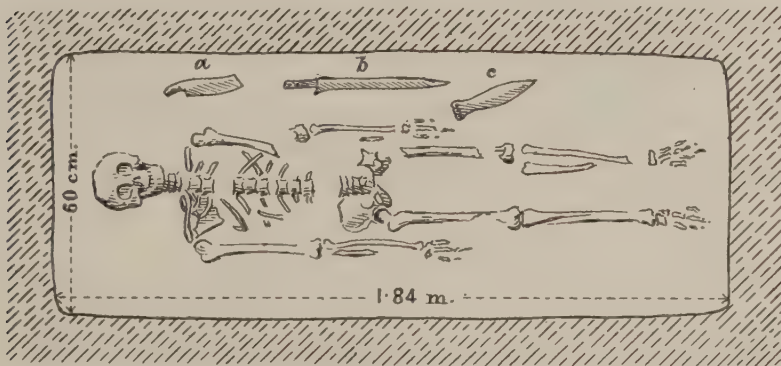


Fig. 16. Plan of Shaft-Grave (No. 4).

No. 4. *Shaft-Grave*.—Mean depth from the surface of the shaft to the bottom of the grave 3·70 metres. The depth of the actual grave beneath the covering slab was 45 centimetres. The edges of the covering slabs were carefully squared.

The grave (length 1·84 metres, width 60 centimetres) contained remains of a much decomposed skeleton, with the head to the east. By the left side of the body were two razors of different types and a knife. (See plan, fig. 16.)

- 4a. Bronze razor: 20 centimetres long, 5·3 centimetres broad at end. (Cf. fig. 33.)
- 4b. Bronze knife: 36 centimetres long. (Cf. fig. 113, 4b.)
- 4c. Leaf-shaped razor of bronze. (Cf. fig. 113, 64c.)

No. 5. *Shaft-Grave*.—Depth from surface 3·40 centimetres. The grave (1·40 metres long, 55 centimetres broad), covered with roughly-hewn slabs, contained remains of a skeleton with its head to the east. By the head was a small painted vase (*a*), and near the right hand a plain cornelian bead.

5*a*. Small two-handled beaked jug (9·5 centimetres high), with painted decoration dark brown on buff. (See fig. 117, 5*a*.)

5*b*. Plain cornelian bead of sub-cylindrical form.

No. 6. *Pit-Cave*.—The tomb had been disturbed and the bones were much pulverised, but their remains seemed to indicate that the head had been south.

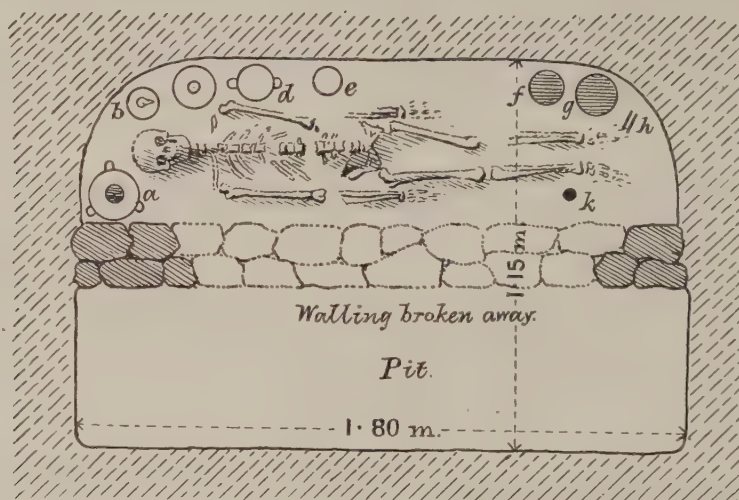


Fig. 17. Plan of Pit-Cave (No. 6).

The depth of the pit from the surface was 2·50 metres, and a ledge to facilitate descent had been made on its east side.

It seems as if any weapons or implements of bronze that may have been placed in the tomb had been carried off by those who broke into it. The arrangement of the existing contents of the grave is shown in fig. 17.

6*a*. Three handled vase with painted designs. Height about 28 centimetres. Upper part broken. (Fig. 117, 6*a*.)

6*b*. Small beaked vase with one handle, 7·5 centimetres high. (Fig. 117, 6*b*.)

6*c*. Plain clay bowl.

6*d*. Two-handled bowl.

- 6e. Plain clay cup.
- 6f. Small bronze mirror with two holes for fixing handles (diameter 12·3 centimetres).
- 6g. Large bronze mirror as the last (diameter 17 centimetres), much broken.
- 6h. Bronze pins.
- 6j. Two stone spindle-whorls.
- 6k. Much abraded lentoid bead of steatite, with traces of intaglio representing an animal.

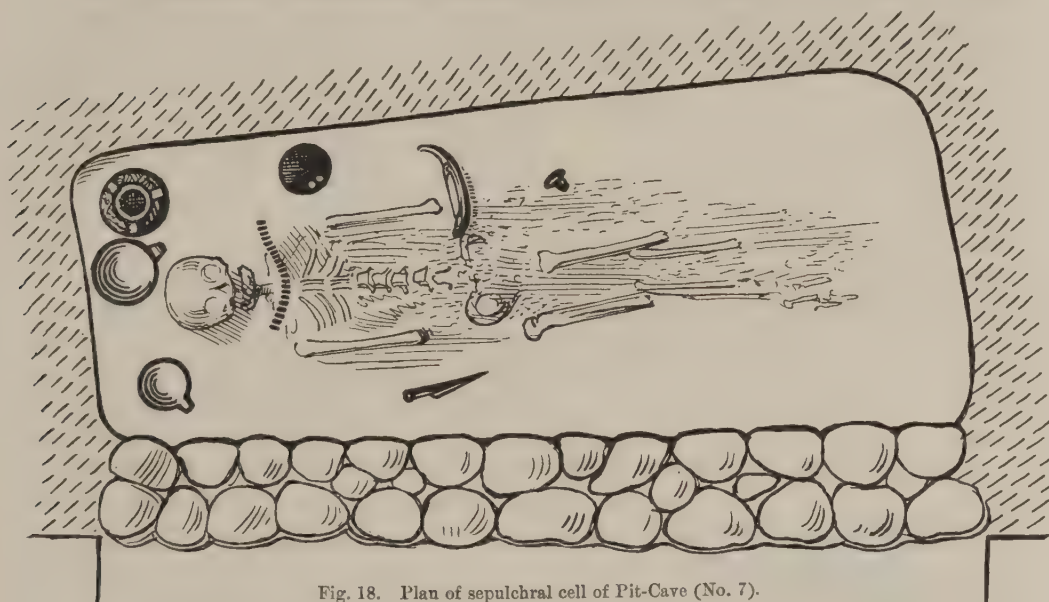


Fig. 18. Plan of sepulchral cell of Pit-Cave (No. 7).

No. 7. *Pit-Cave* (for plan, see figs. 12a, 12b).—Skeleton, much decayed, head to west. About the neck was a necklace of embossed gold beads (c). Near the middle was found a gold-plated ring (d), the device of which was a Sphinx. Near the right arm was a bronze knife (a), and by the left shoulder a bronze mirror (b).



Fig. 19. Bronze knife with solid handle, from Pit-Cave (No. 7).

Lower down the left arm was an ivory boat (e) and a three-handled vase, and two pedestalled cups were ranged along the south margin of the grave near the head (f, g, h).

7a. Bronze knife with solid handle, length 19 centimetres. (Fig. 19.)

7b. Bronze mirror (diameter 13 centimetres) with two perforations for attaching handle.

7c. Gold necklace of forty beads with triple perforation, showing double argonaut design in *repoussé* work (fig. 20, and fig. 119, 7c). Another similar necklace was found in



Fig. 20. Gold beads of a necklace from Pit-Cave (No. 7). ($\frac{3}{4}$.)

Grave 36. Similar gold necklaces were found in the chamber-tombs near Phaestos (Savignoni, *Necropoli di Phaestos*, p. 99, fig. 58), and others were obtained at Mycenae from the tombs of the lower town (Tsountas, 'Εφ. 'Αρχ. 1888, pl. ix. 4), in some cases showing eight tentacles instead of six (Karò in Daremberg et Saglio, *Dictionnaire des Antiquités*, art. Monile, fig. 5125,

and Savignoni *loc. cit.*). Another from a contemporary tomb at Argos is published by Vollgraff (*Bull. de Corr. hell.* 1904, p. 383, fig. 15). A mould for a similar bead, said to have been found in Asia Minor, is in the Berlin Museum (Furtw. u. Loeschke, *Myk. Vasen*, p. 34, fig. 22). The design has frequently been misunderstood by those who have described it.^a As stated above, it is essentially a duplicated argonaut (*argo argonauta*), though it has been crossed by the octopus idea, and in some varieties the number of the tentacles is, in consequence of this, raised from six to eight. The argonaut by itself, representing the half of the present design, with three tentacles, occurs on gold plates and glass paste beads from Mycenae (J. H. S. xxiv. 324, fig. 1a; and 'Εφ. 'Αρχ. 1887, pl. xiii. 2, 3), and also on the mould found by Schliemann (*Mycenae*, p. 107, fig. 162).

The argonaut, which at Knossos is a favourite motive of the beautiful faience fabric of the close of the Third Middle-Minoan Period, was taken over, probably from this source, together with similar rockwork on to the painted ware of the succeeding Palace Style. It also appears on wall-paintings, *e.g.* in those of the room by the Megaron at Mycenae.

7d. Gold-plated ring with bronze core. On the bezel is a *repoussé* design of a winged Sphinx to left (fig. 21, and fig. 119, 7d). Diameter of hoop of ring 22 millimetres.



Fig. 21. Gold-plated ring showing Sphinx, from Pit-Cave (No. 7).

7e. Ivory boat: original length about 25 centimetres (fig. 22). The upturned end recalls the Minoan boat on a seal-impression from the Temple Repository of the Palace at Knossos (*Report*, p. 58, fig. 36). The two holes at either end of the hollow part of the boat possibly served for a lid, and the flat surface of the raised rim corroborates this view. In this case we have here a casket similar to the well-known duck-shaped boxes of Egypt.

7f. Pedestalled cup with two handles. Height 16·5 centimetres, diameter of cup 15 centimetres (see fig. 118, 7f). It is of plain clay originally covered with a kind of black varnish which seems, however, to have been imperfectly fixed.

^a Vollgraff, however, *loc. cit.* has recognised its true signification.

7g. Pedestalled cup with one handle, of plain clay. Height 12 centimetres, diameter of cup 11·8 centimetres.

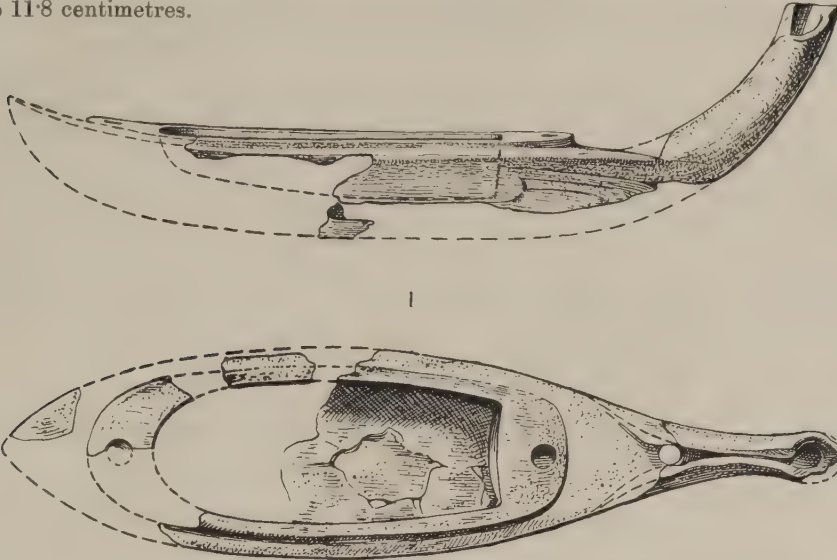


Fig. 22. Ivory boat, perhaps a casket, from Pit-Cave (No. 7).

7h. Painted "amphora" with three handles, brown design on pale buff. Height 29 centimetres. (Fig. 23.) For the upper band compare the amphora from Argos (*Bull. de Corr. hell.* 1904, pl. xiv.).

No. 8. Chamber-Tomb, approached to east by a *dromos* with steps and a sloping descent. The door had been broken in, and the remains of a *larnax* and a Roman pot were found in the *dromos*, an indication that the tomb had been robbed in Roman times. The chamber contained the remains of four plain *larnakes*, all robbed, two of them on the floor and the others arranged crosswise above. From the position of the two lower chests it is evident that the *larnax* that had been taken out had originally been laid beside them as shown in dotted lines on the plan, fig. 24. *Larnakes* were found arranged in a similar way in double tiers in chamber-tombs at Ligertino and Phaestos.



Fig. 23. Painted "amphora" from Pit-Cave (No. 7).

No. 9. *Chamber-Tomb*, with stepped *dromos* about 5 metres long, slightly increasing in width, from 80 centimetres to 1 metre, as it approaches the door.

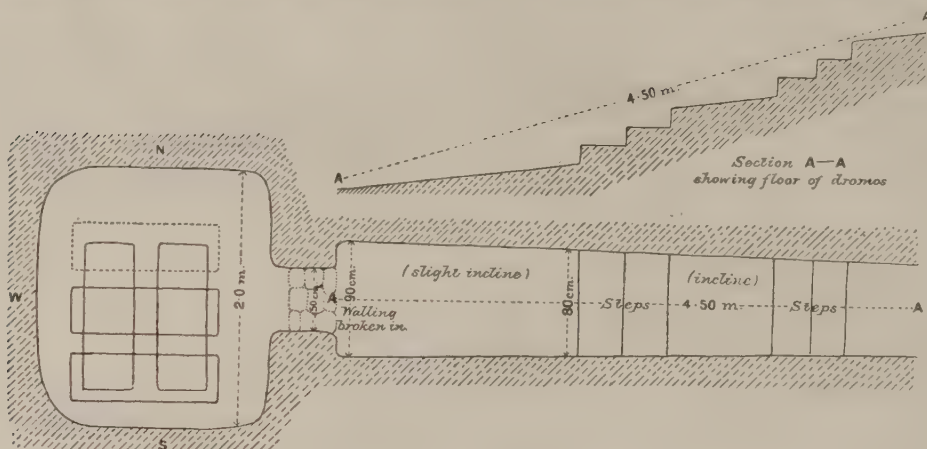


Fig. 24. Plan of Chamber-Tomb (No. 8), with section of entrance passage.

(See plan and sections, figs. 25a, 25b, 25c.) The walling of the entrance had been broken open and parts of a *larnax*, a charcoal holder (cf. fig. 46), and a plain-handled vase were found outside.

Inside the chamber to the left was another *larnax*, which, however, had been

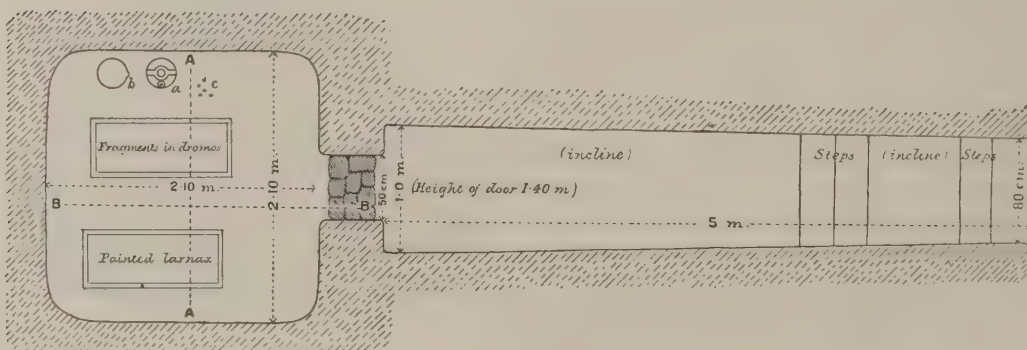
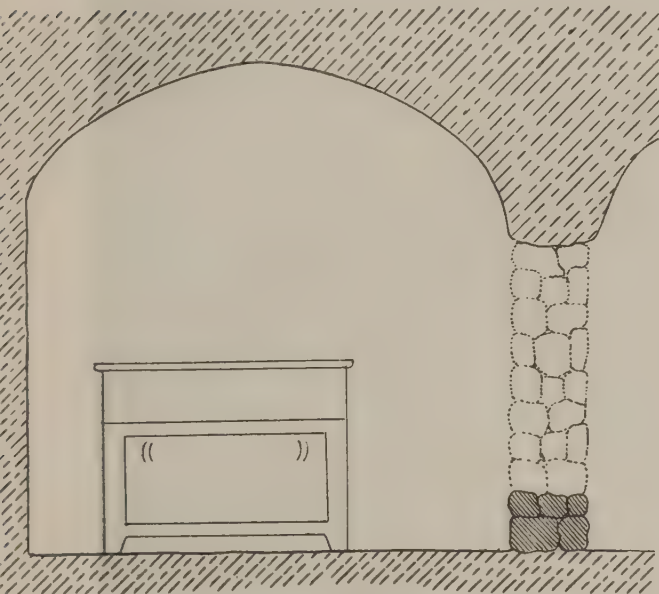


Fig. 25a. Plan of Chamber-Tomb (No. 9).

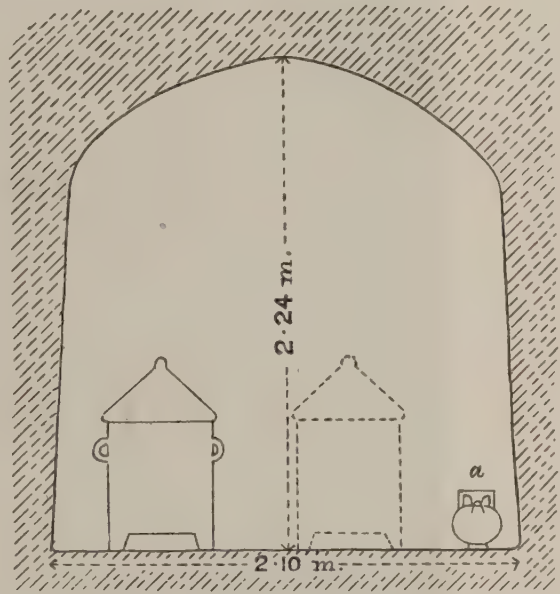
broken into, the lid being smashed, and near the right wall of the chamber was a small painted stirrup vase (*a*) (see fig. 114, 9a) 9 centimetres high and 12 centimetres in diameter, and a plain spouted bowl (*b*) (fig. 118, 9b), with a round flat knob on either side. Some stone spindle-whorls were also found.

The *larnax* (fig. 26a) exhibited the peculiarity of being divided into panels, that at one end provided with cross pieces, clearly indicative of a woodwork model and recalling the sides of the gypsum throne found in the Palace of Knossos. On carefully cleaning the chest faint traces of painted designs appeared on the two principal faces and at one end. At the end are simple waved lines, but on either face are traces of more elaborate designs in red. On one side nothing can be made out but the four-spoked wheel and part of the frame of a chariot, going left, in



Longitudinal section of Chamber B-B
(Upper part of walling restored.)

Fig. 25b. Chamber-Tomb (No. 9).



Transverse section of Chamber A-A

Fig 25c. Chamber-Tomb (No. 9).

the panel nearest to the left end of this face. The left panel of the other side shows traces of a beardless man throwing a lasso which twists round the curved horns of a Cretan wild goat. His other hand seems to seize the goat's hind quarters, and in front of the animal is another man, the upper part much effaced, who apparently grasps its neck. The horns of another "agrimi" are visible behind the first. On the partition between this and the next panel are palm trees. The subject of the panel to the right is quite obliterated. Below, along the whole length of the *larnax*, runs a series of egg patterns, perhaps conventional indications of rocks. The drawing is altogether of the rudest kind.

No. 10. *Pit-Cave* ("The Hunters' Grave").—The shaft of this had been subsequently cut into by a chamber-tomb (No. 10, *b*). This later tomb, which was approached on the east by a *dromos* 3 metres long, had been broken into. The



Fig. 26*a*. Painted *larnax* or clay sarcophagus from Chamber-Tomb (No. 9).

walling of its entrance had been removed and parts of a *larnax* lay outside in the *dromos*. Inside the chamber to the left lay another plain *larnax* with a broken

cover containing a fairly preserved skeleton, the skull of which was at its western end. To the right was a fragmentary stirrup-vase with a pattern resembling that of fig. 117, 21*a*, and a plain spouted bowl.

The walling of the sepulchral recess belonging to the pit-cave, into the shaft of which this chamber had cut, was found intact. A much decayed skeleton lay within with its head north. The skull was exceptionally thick, and seemed to be that of a man. A bronze razor (*a*) and knife (*b*), of the ordinary types, had been placed near the feet, and a small spouted vase (*c*) by the head. On the inner margin of the grave, beyond the leg bones, but at a higher level (40 to 60 centimetres above the floor), were fifteen small bronze arrow-heads of two types, (*d*) and (*e*) (see fig. 28). These arrow-heads are from 4·5 to 4·7 centimetres long, and are identical with those more recently found in a magazine west of the Palace.^a From their small size they may most probably be regarded as arrows of the chase. We have here a hunter's grave. (See fig. 27.)

10*a*. Bronze razor with remains of its wooden handle; blade 20 centimetres long (cf. fig. 63).

10*b*. Bronze knife, 23 centimetres long (cf. fig. 113, 51*c*).

10*c*. Small painted vase with high beak,

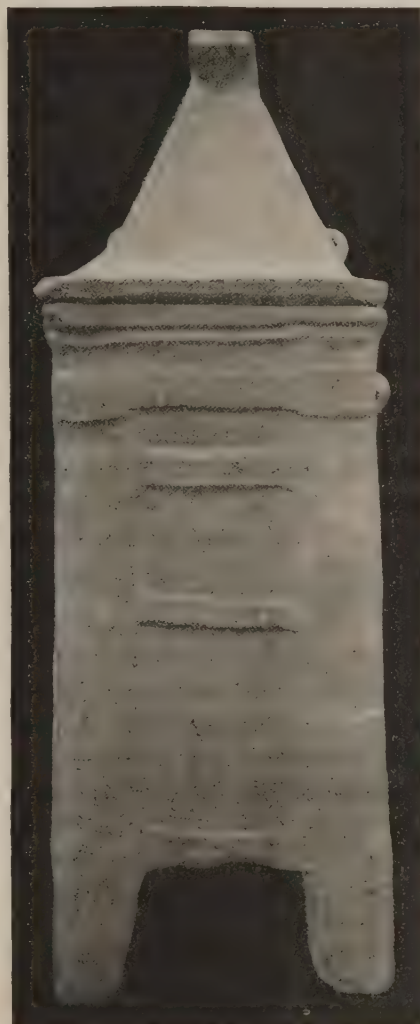


Fig. 26*b*. End of a painted *larnax* from Chamber-Tomb (No. 9).

^a *Knossos: Report*, 1904. *B. S. A.* x. 61. Eight similar arrow-heads, varying in length from 3·8 centimetres to 1·8 centimetre, were found in a tomb at Phaestos (Savignoni, *Necropoli di Phaestos*, 41, fig. 21). In a tomb of the Lower Town at Mycenae, Dr. Tsountas found twenty similar arrow-heads in two bundles of ten each (*Mycenæan Age*, 206).

about 8 centimetres high. (For shape see fig. 117, 6b.) It presents a wave-like decoration round the upper part of its body.

10d, e, f. Bronze arrow-heads. (Fig. 28.)

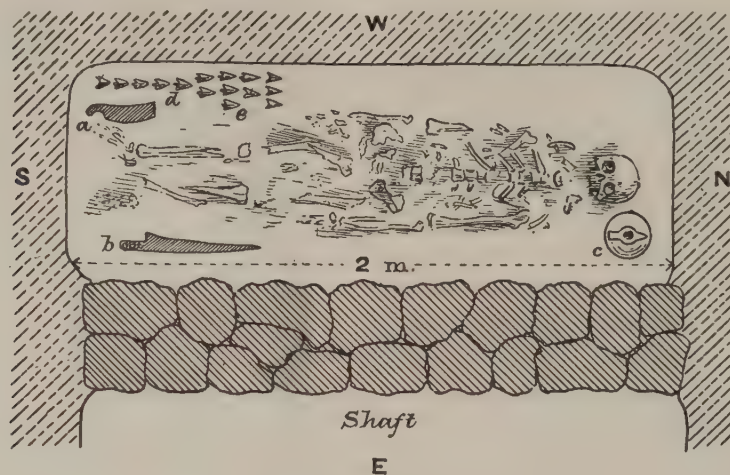


Fig. 27. Plan of the Hunter's Grave (No. 10).

No. 11. *Small Chamber-Tomb*.—The door of this tomb was found intact, approached by a short descending *dromos*. The chamber, however, seems to have been plundered by means of a hole through its vault, since no small objects were found inside. The arrangement within was, however, interesting. To the right of the entrance was a plain *larnax* with a gabled cover a good deal broken, but containing remains of a skeleton with the legs drawn up and the shin bones being in a nearly upright position. Other examples of this crouched attitude will be described below. The head was at the eastern end of the clay sarcophagus. To the left of the *larnax* was a heap of bones simply laid on the floor of the tomb. They were much decayed, but part of a skull, apparently a woman's, was preserved. We have here therefore a combination of the simpler form of burial with that within a sarcophagus. (See plan, fig. 29.)

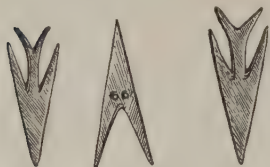


Fig. 28. Bronze arrow-heads from the Hunter's Grave (No. 10).

No. 12. *Chamber-Tomb*.—The entrance to this tomb, approached by a *dromos* $4\frac{1}{2}$ metres long, was found with its original double walling intact. The doorway was 1.33 metre in height, in width below 52 centimetres, gradually

narrowing towards the top. The chamber itself was undisturbed. Upon the floor were the remains of two skeletons with their feet pointing east, towards the doorway. Between the heads of the two skeletons lay a painted vase (*a*), a

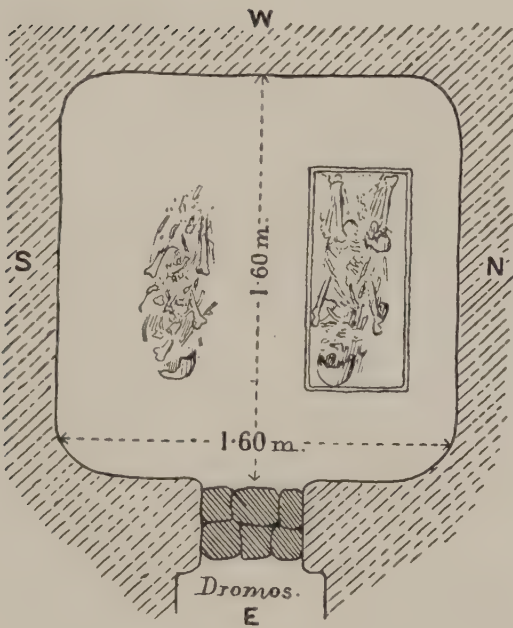


Fig. 29. Plan of Chamber-Tomb (No. 11).

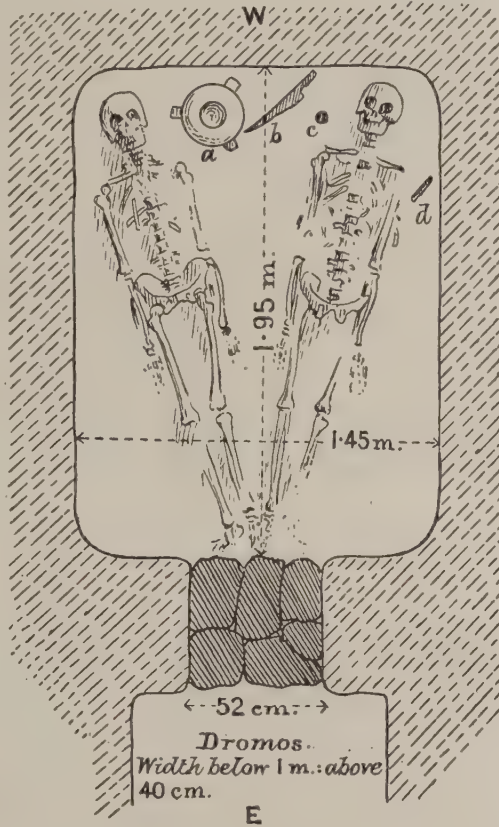


Fig. 30. Plan of Chamber-Tomb (No. 12.)

small bronze knife (*b*), and a whorl (*c*), and by the left shoulder of the skeleton on the left was a bronze pin (*d*). (See plan, fig. 30.)

12*a*. Three-handled "amphora," height 20 centimetres (fig. 117, 12*a*). The rayed band round the upper part of its body seems to be a degeneration of the fine foliate decoration of 68*b* (fig. 83).

12*b*. Small bronze knife, 12.3 centimetres long. For type see 51*c* (fig. 71).

12*d*. Steatite whorl.

12*e*. Bronze pin: broken.

No. 13. *Chamber-Tomb*.—This tomb, approached on the east by a *dromos* incompletely excavated, had been plundered, and a good deal ruined by the falling in of the rock above. Its interior arrangement resembled that of No. 11. On the north side of the tomb to the left of the entrance was a plain *larnax*, 1·20 metre in length, 47 centimetres in breadth, 78 centimetres in height. It contained remains of bones and a skull at the west end. On the opposite or southern side was a decayed skeleton with the head west, near the right shoulder of which were two knives, *a* and *b*.

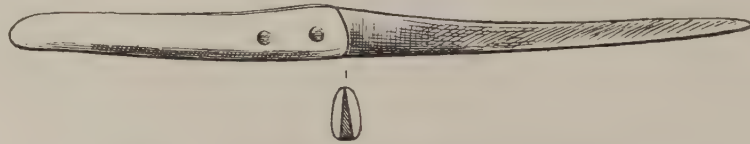


Fig. 31. Bronze knife with ivory handle from Grave No. 13.

13a. Bronze knife with ivory handle. (See fig. 31.)

13b. Small bronze knife, without handle, of ordinary type.

No. 14. *Chamber-Tomb*.—This “Tomb of the Tripod Hearth” was in its size and in the abundance of bronze vessels that it contained the most important grave opened in this cemetery. It was approached to the east by a *dromos* 14½ metres (about 48 feet) in length, the width of which very gradually increased from 1·30 metre at the entrance to 1·55 metre by the chamber door. This passage descended very rapidly, with steps at intervals, to a depth of 6·8 metres below the level of its entrance. The greater part of it thus formed a tunnel, about 2 metres high, in the soft limestone rock, the sides of which had, as usual, a slight inward slope.

The excavation of this considerable tunnel was a slow and difficult task, owing to the constant need of propping up the roof with wooden supports. It was therefore with a sense of great disappointment when, after over a fortnight's work, we reached the doorway of the actual tomb to find it open. It was not here, moreover, a case of an original walling broken into by later plunderers. No trace of any blocking could be found, the usual *dolbris* of such being altogether wanting. The door-opening itself, on the other hand, was made with more elaboration than that of any other chamber-tomb of this cemetery. On either side of it a groove, 2·5 centimetres deep and 10 centimetres broad, had been cut

out of the rock façade, suggesting the original insertion of some other material. The elevation is shown in fig. 32.

On clearing out the entrance it was found that large masses of rock had fallen within, and the whole chamber was choked with rubbish. As it was unsafe to clear it out from within, it became necessary to dig down a large shaft from the

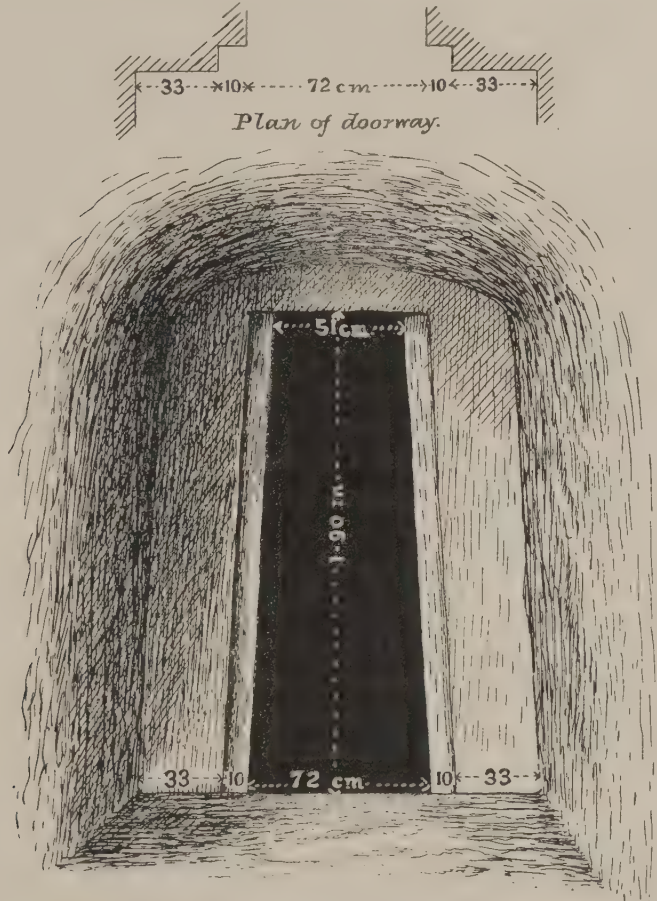


Fig. 32. Doorway of the Tomb of the Tripod Hearth (No. 14).

surface of the ground above, at this point 7.50 metres above the floor of the chamber. The chamber when cleared proved to be of oblong form, 2.80 metres from east to west by 3.70 from north to south.

The area of the tomb immediately opposite the entrance was devoid of

objects. A little to the left, however, stood a tripod stand of plaster,^a forming a moveable hearth, the hollow upper surface of which contained a heap of charcoal. (See fig. 33, Plate LXXXIX.) The dead within were cold, and live coals taken, we may believe, from the house fire had been placed here for their comfort. The same usage was exemplified in the royal tomb at Isopata,^b and in several of the smaller graves of the present cemetery^c clay chafing pans filled with charcoal had been placed as a substitute for the actual hearth.

Beyond this the whole south-west area of the tomb was covered with a magnificent group of fourteen bronze vessels, including a large three-legged cauldron, forerunner of the later tripod *lebes*, bowls and basons of new types, cups and ewers, and a lamp with a moveable attachment for its trimmer. The group is reproduced in fig. 33 (Plate LXXXIX.), showing the position occupied by each object when uncovered. Several of the larger vessels had been a good deal distorted by the superincumbent *débris*, and in these cases their original contours are restored in the drawing.

In the north-west corner of the tomb a rectangular cavity had been excavated in the floor, 1 metre in length by 40 centimetres in width and 45 centimetres deep. Much decayed human bones were found in this. From its dimensions, which correspond with those of the recipients of the clay sarcophagi, it seems probable that a dead person had been here interred in a crouching position. There was no cover to this cavity.

About a metre east of this cist lay a group of objects consisting of a bronze dirk with an ivory handle, a lance-head, a knife and two triangular razors, a pair of bronze mirrors, and remains of what appeared to have been two caskets, one with an ivory-mounted cover, the other of wood with bone inlays, but both of them much crushed and broken by fallen blocks from the roof of the chamber.

The central area of the tomb, immediately opposite the entrance, was totally devoid both of bones and relics. This, coupled with the fact that the doorway itself was found open, suggests more than one problem. It is in itself difficult to believe that the small coverless pit in the corner of the chamber contained the personage for whom this important tomb had been wrought. Rather we should suppose it to have been made for some slave or attendant, or at any rate for a

^a Similar plaster tripods were found in the Palace at Knossos, one in the Shrine of the Double Axes, perhaps used as a stand for offerings of food.

^b See *post*.

^c Nos. 9, 32, 95, 97. See fig. 46.

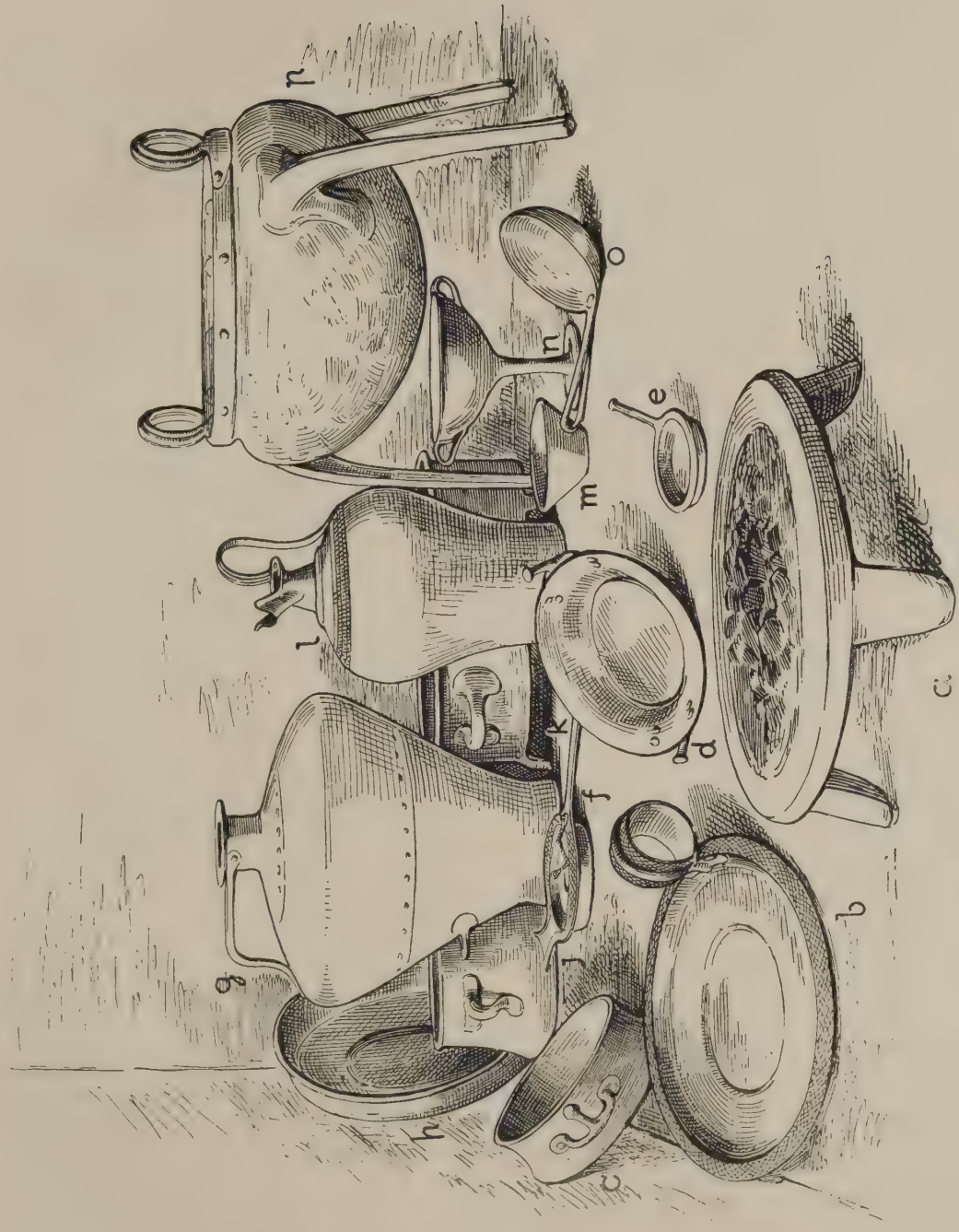


Fig. 33. Tripod Plaster Hearth and group of Bronze Vessels found in south-west corner of Chamber-Tomb (No. 14).

ANTIQUITIES FROM THE CEMETERY OF ZAFER PAPOURA.

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secondary member of the family of the great departed. On the other hand, when it is borne in mind that other much less elaborate graves of this cemetery contained jewelry and gold-mounted weapons, how are we to account for the fact that

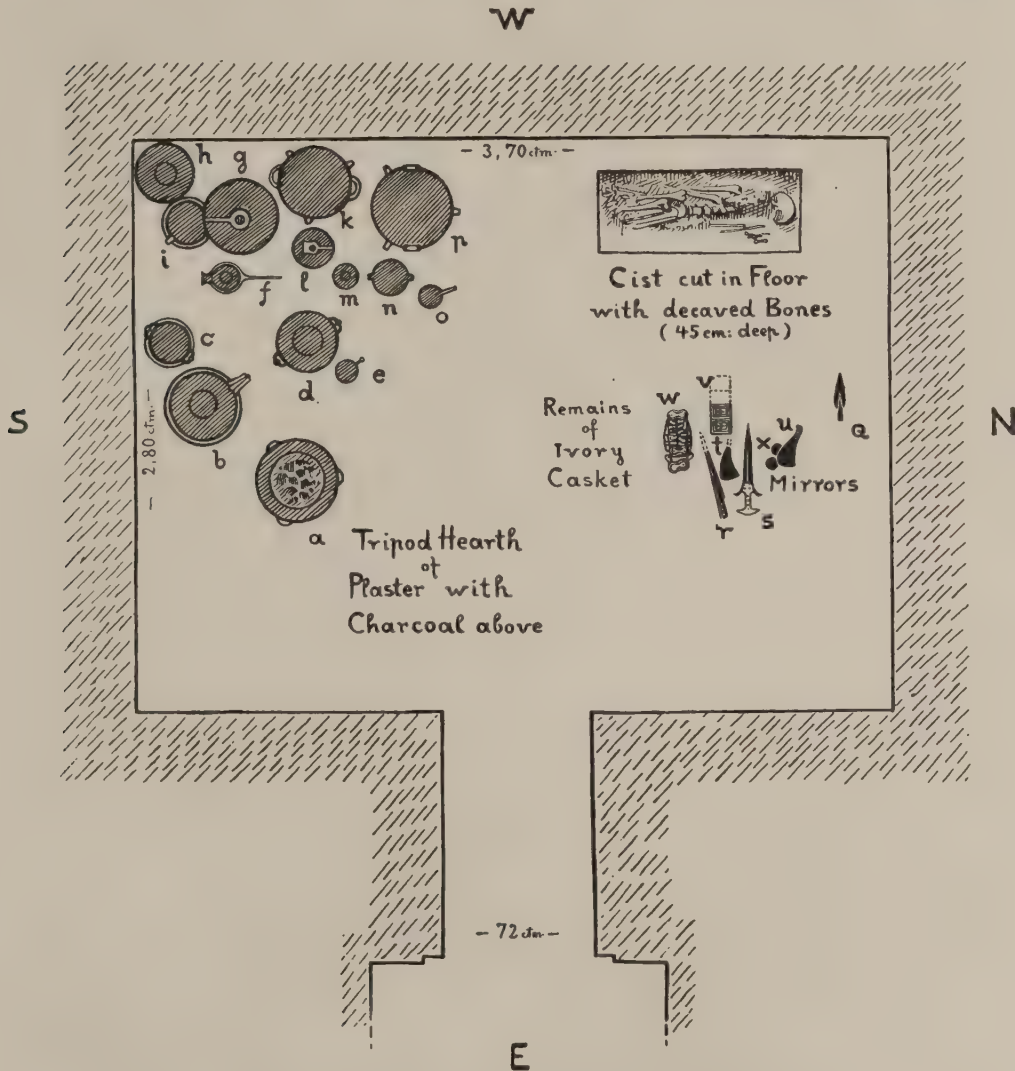


Fig. 34. Plan of chamber, Tomb of the Tripod Hearth (No. 14).

in this imposing sepulchral vault not a scrap of anything in the shape of precious metals was discovered?

Such an explanation as that the tomb was plundered after its definite closing is excluded by the fact that in this case the entrance seems never to have been walled up. There was, moreover, no trace of such disturbance within the vault as is usually the result of such violation. The caskets may have been tampered with, but as far as could be judged the bronze vessels and other objects stood in their original places. Again, a robber, though he might have singled out the gold and jewelry for abstraction, would certainly not have taken the body or bodies which *ex hypothesi* should have occupied the middle of the tomb. Even had he done so, some isolated gold bead or intaglio, some inconspicuous pin or scrap of gold leaf would surely have been overlooked in the course of any such hurried removal, carried out in the half-light supplied by lamp or torch.

Are we then to suppose that the central interment was never made? Such a theory is again beset by almost insurmountable difficulties. The elaborate service of bronze vessels, containing, we may suppose, the offerings of food and drink, would most probably have been set in place after the deposition of the body of the departed. The live coals from the house fire would hardly have been brought into a tenantless vault. The traditions of sepulchral practice as a whole weigh against the supposition that the *peculium* of the dead should have been laid in the tomb before the dead himself.

The phenomena with which we are confronted may most probably stand in connection with the specially rotten composition of the soft limestone rock, the Cretan *kouskouras*, above and about this tomb. It may be assumed that the interment actually took place, and the absence of relics such as gold-mounted swords, engraved gems or jewelry, and other objects in the precious metals tends to show that these, together with the corpse itself, were included in a sarcophagus answering in form to the *larnakes* found in other graves. It may be suspected that in this case the funeral chest was of a more magnificent character, coated with bronze plates, perhaps even with a plating of gold or silver.^a This sarcophagus would have been placed in line with the major axis of the tomb, facing the entrance, in the gap between the two groups of objects that were actually found.

If we now imagine that shortly after the deposition of the sarcophagus and before the projected walling in of the doorway a fall of rock from the roof threatened the destruction of the whole, nothing is more reasonable than to believe that the coffin itself, with its precious contents, was hastily extracted from the *débris* to be eventually placed in a securer resting-place. At the same

^a Compare the silver chest of Vetulonia (Falchi, *Vetulonia*, Tav. xii.).

time the increasing danger from the falling vault, coupled with the minor value of the bronzes and other objects, may have resulted in their being left in their original positions. The great chamber closed itself, and the collapse of the entrance would no doubt have followed had not this and the *dromos* been refilled with earth. The doorway of the tomb, when opened out again, at once threatened ruin, and had to be shored up with a substantial wooden framework.

14a. Tripod hearth of plaster, diameter 45 centimetres, with charcoal above. (See Plate LXXXIX.)

14b. Shallow one-handled bason of bronze (diameter 35 centimetres). The border and handle (attached by three rivets) are decorated with a raised reticulated pattern, recalling turner's work, which is shown in more detail on the lamp (*f*). (See Plate LXXXIX.) Except for its shallower form this vessel recalls those found in the building west of the Palace at Knossos, and another, of which the rim only was preserved, from the cemetery at Phaestos.^a The decoration in the present case, however, is of a more mechanical character.

14c. Two-handled bronze pan with upward curving sides (12 centimetres high). (See



Fig. 35a. Bronze lamp (14*f*), with chain for trimmer, from the Tomb of the Plaster Hearth (No. 14).

Fig. 35b. Ornament of rim of bronze lamp.

fig. 33.) Its greatest diameter is about 22 centimetres. The knobbed upright projection on each of the horizontal handles recurs in 14*d*. This is a common feature of Minoan bronze bowls, the knobbed projection being perhaps found useful for winding stuff round when lifting the heated vessel. This is probably a cooking pot.

14*d*. Two-handled bronze pan, diameter c. 25 centimetres. The handles, each attached by four rivets, are of the same type with upright projections. (See Plate LXXXIX.)

14*e*. Small bronze pan (diameter 10 centimetres) with solid handle (11 centimetres long) sloping upwards, having a knob at the top. The knob served doubtless the same purpose as that described under 14*c*. A similar vessel was found in Tomb 36 below, another in the necropolis of Phaestos,^b and a third in a tomb of the Lower Town of Mycenae.^c These must be regarded as small frying pans.

^a Savignoni, *op. cit.* 50, fig. 30.

^b Savignoni, *op. cit.* 47, fig. 29.

^c Tsountas, 'Εφ. 'Αρχ. 1888, pl. ix. 24, and p. 137. From Tomb 2.

14f. Bronze lamp, inner diameter of bowl 19 centimetres. (Fig. 35a.) Its border shows a hatched decoration (see fig. 35b) like that of the bason (14b). It is provided with a long handle with a tapering end convenient for insertion into the chinks of walls. Its most remarkable feature, however, is a chain attached to a knob at the base of the handle, consisting of three long links ending in a loop, from which doubtless hung some kind of trimmer for the wick. The lamp is quite unique.

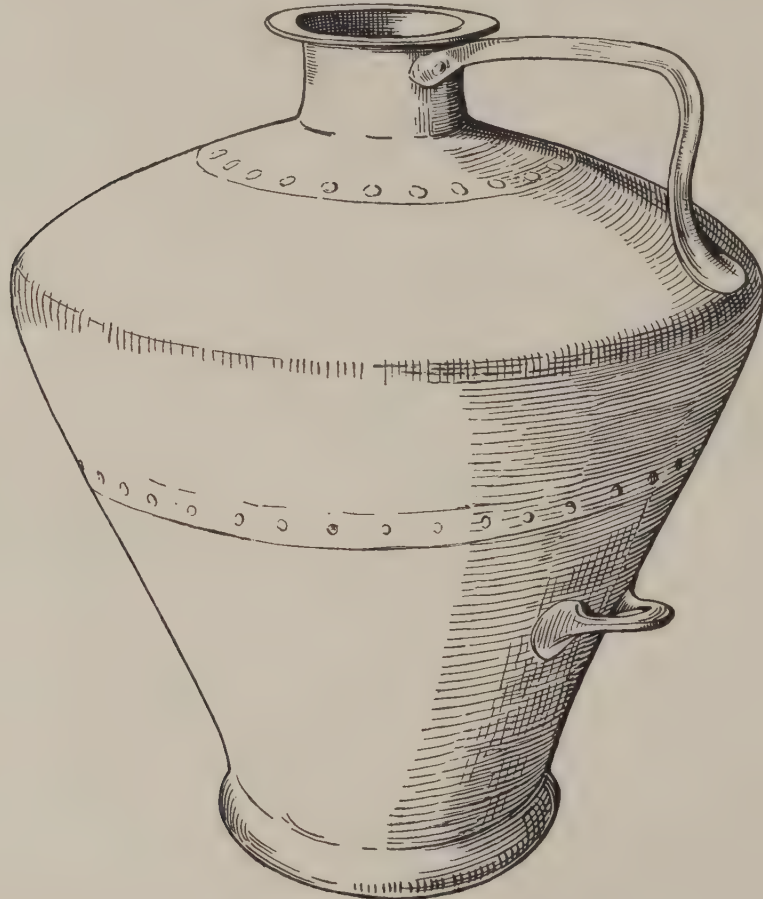


Fig. 36. Large bronze jug (14g) from the Tomb of the Tripod Hearth (No. 14).

14g. Large bronze jug, 35 centimetres high and 35 centimetres in diameter, with two handles, one attached to neck and shoulders, the other to its lowest section. (Fig. 36) It is a type of which examples have also occurred at Palaikastro,^a in the Palace of Hagia

^a 55 centimetres high, R. M. Dawkins, *B. S. A.* x. 208.

Triada,^a and, of identical height, in a tomb at Phaestos.^b Apart from the mouth and base this vase is built up of three separate overlapping sections joined together by means of small rivets. In its general form it answers to the copper jugs found in the fourth shaft-

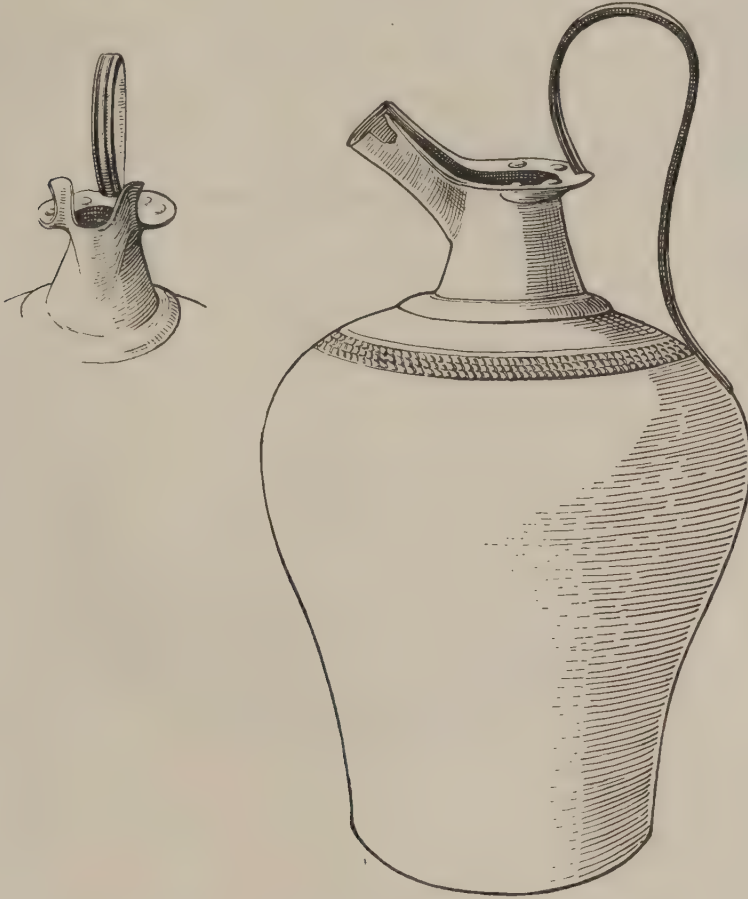


Fig. 37. Bronze ewer (147) from the Tomb of the Tripod Hearth (No. 14).

grave at Mycenae, but thanks to the greater malleability of the metal the sides of these latter were made in one piece.

14*h*. Bronze handle-less bason, in part decayed, diameter c. 30 centimetres. (See fig. 33.)

^a Halbherr, *Mon. Ant.* 1903, 10.

^b Savignoni, *Necropoli di Phaestos*, 44, fig. 25.

14j. Capacious bronze pot with two upright handles, diameter 20 centimetres. (See Plate LXXXIX.)

14k. Two-handled bronze cauldron with three short feet and nearly upright sides,



Fig. 38. Bronze tripod cauldron (14p) from the Tomb of the Tripod Hearth (No. 14).

diameter 42 centimetres, height of bowl 15·5 centimetres. The handles are attached horizontally. (See fig. 33)

14*l*. Bronze spouted ewer of elegant form (fig. 37), height 40 centimetres, diameter 35 centimetres. Its high curved handle is attached to the rim by four rivets. The decoration round the shoulders somewhat recalls that of the lamp 14*f*, and bason 14*b*. Round

the neck is a raised ring, which is a common feature in Minoan clay vessels. It originates, however, in metal technique, its function being to cover the junction of the collar and shoulder of vases.

14*m*. Plain bronze cup with flat bottom, diameter at rim 14 centimetres. (See Plate LXXXIX.)

14*n*. Bronze pedestalled cup with two handles, height 18 centimetres, diameter at rim 18 centimetres. (See Plate LXXXIX.) This is interesting as supplying an example of the metal prototype of a form of cup that was commonly reproduced in clay during the latest Minoan Period. (Cf. fig. 118, 7*f*).

14*o*. Bronze ladle, consisting of a shallow cup with a high looped handle. (See Plate LXXXIX.) Similar types of ladle are already found in clay from the Third Middle-Minoan Period onwards.

14*p*. Bronze tripod cauldron with two upright ring handles. (Fig. 38.) The height of the whole is 47 centimetres, and the diameter of the bason is 41 centimetres. A metal ring to which the handles are attached is riveted to the rim of the cauldron. The legs, which spring from the shoulders, are 33 centimetres in length.

14*q*. Bronze lance-head with flat leaf-shaped blade (length 25 centimetres, breadth of blade 4·8 centimetres). (Fig. 113, 14*p*, Plate XCI.)

14*r*. Bronze knife of the ordinary form, the point wanting. Three perforations for rivets in handle.

14*s*. Bronze dirk or dagger with finely-preserved ivory plates and pommel on the hilt (length 42 centimetres). From the upper end of the blade project two horns forming a guard. (Figs. 39*a* and 39*b*, and 109, 14*r*, Plate XCI.)

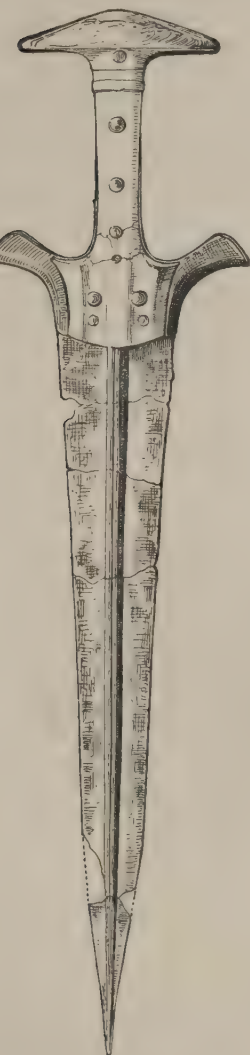


Fig. 39*a*. Bronze dagger (14*s*) with ivory hilt from the Tomb of the Tripod Hearth (No. 14).

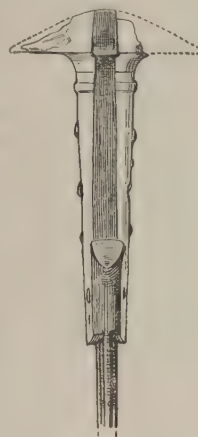


Fig. 39*b*. Side view of ivory mounted dagger-hilt.

14*t*, *u*. Bronze razors with blades exceptionally broad at the end, giving the whole a

sub-triangular outline. An instrument of the same form was found by Tsountas in a tomb of the Lower Town of Mycenae.^a

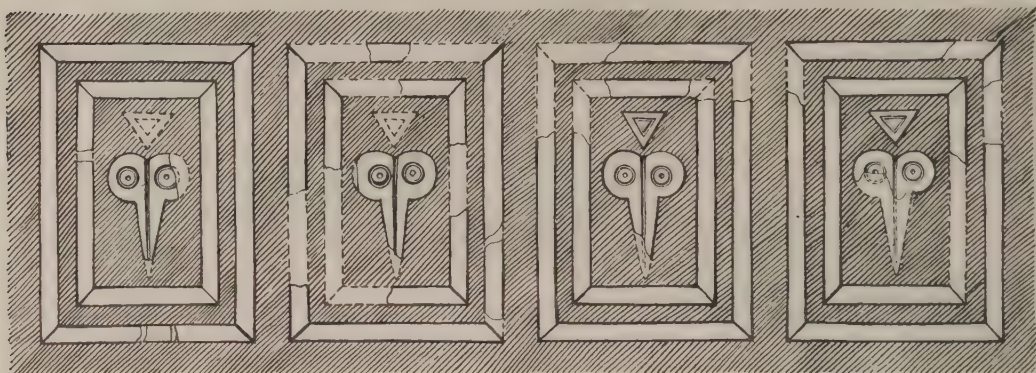


Fig. 40. Portion of a wooden box with bone inlays, from the Tomb of the Tripod Hearth (No. 14).

14*v*. Portion of a wooden box with bone inlays, of which it has been possible to put together four panels (length of each panel 10 centimetres, breadth 9 centimetres). (Fig. 40.)

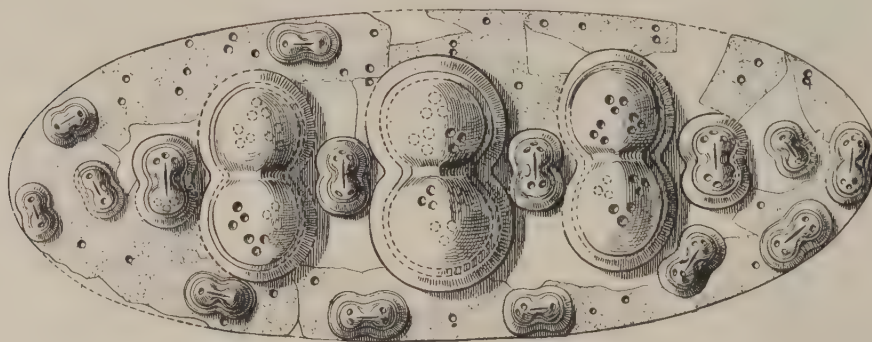


Fig. 41. Ivory lid of a casket with shield-like bosses, from the Tomb of the Tripod Hearth (No. 14).

14*w*. Ivory lid of casket of oval form (length 39 centimetres, breadth 14·8 centimetres). (Fig. 41.) It is set with shield-like bosses fixed by means of small ivory rivets. The

^a *Ep. 'Apx.* 1888, pl. ix. 17.

surface of these is pitted with small holes in groups of three for containing some kind of inlay. Similar shield-like bosses have been found in tombs at Mycenae.

Several of the bosses had become detached, but it is certain that the larger shields occupied the middle part of the lid.

No further remains of the casket, the framework of which may have been of wood, could be discovered.

No. 15. *Chamber-Tomb*, approached by a *dromos* running north. The chamber had been much ruined and disturbed. In it were found a small bronze knife (*a*), a fragment of some other bronze object, a plain ivory mirror-handle (*b*) of oblong form, and a steatite whorl.

No. 16. *Chamber-Tomb*, with *dromos* to east. The door had been broken in and the tomb plundered. A skull and disturbed remains of bones lay within on each side of the door.

No. 17. *Chamber-Tomb*, approached on the east by a stepped *dromos*. Some Late-Minoan painted fragments were found in the *dromos*, and the entrance wall had been half demolished. Immediately inside the door of the chamber lay remains of two skeletons with their heads north, and

beyond these, also lying north and south, was a *larnax* without its lid. Inside the *larnax* at the north end was a fairly preserved skull, but the bones as a whole were much decayed. No other relics were found in this tomb. (See plan, fig. 42.)

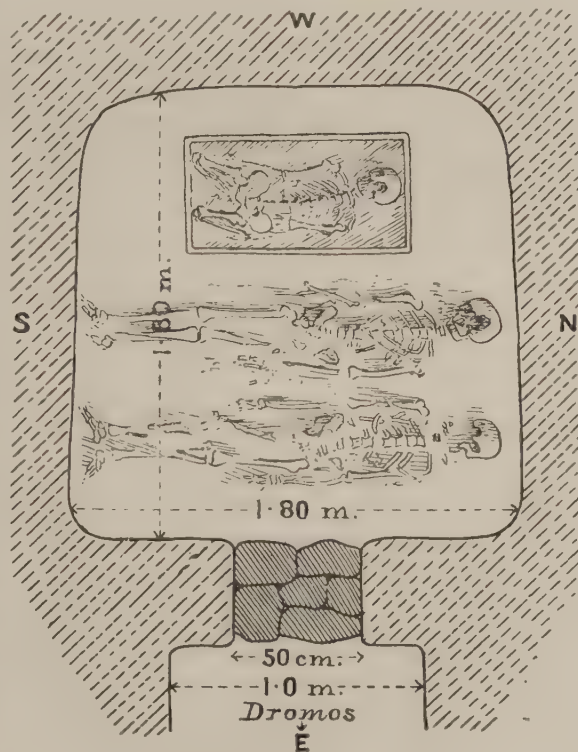


Fig. 42. Plan of Chamber-Tomb (No. 17).

No. 18. *Chamber-Tomb*, with entrance to the east, approached by a *dromos* 3.40 metres long and 1 metre wide. The door, found closed with a stone walling, was 85 centimetres high and 60 centimetres wide below. The form of the chamber was more rounded than usual, diameter 1.73 metres east to west and 1.81 north to south. The vault had collapsed.

Remains of two skeletons lay within with the skulls to west. Between their two heads lay a pair of bronze razors of the usual type (cf. fig. 63), and near them two hones.

No. 19. *Chamber-Tomb*, with short *dromos* to east. Plundered and much destroyed.

No. 20. *Chamber-Tomb*, like the last, with *dromos* to east. The door had been broken into and the tomb plundered. The chamber had largely collapsed.

No. 21. *Chamber-Tomb*, approached to east by *dromos* 5.80 metres long, descending by a double flight of steps to a depth of about 3 metres below the surface level. The walling of the doorway (1.37 metres high)

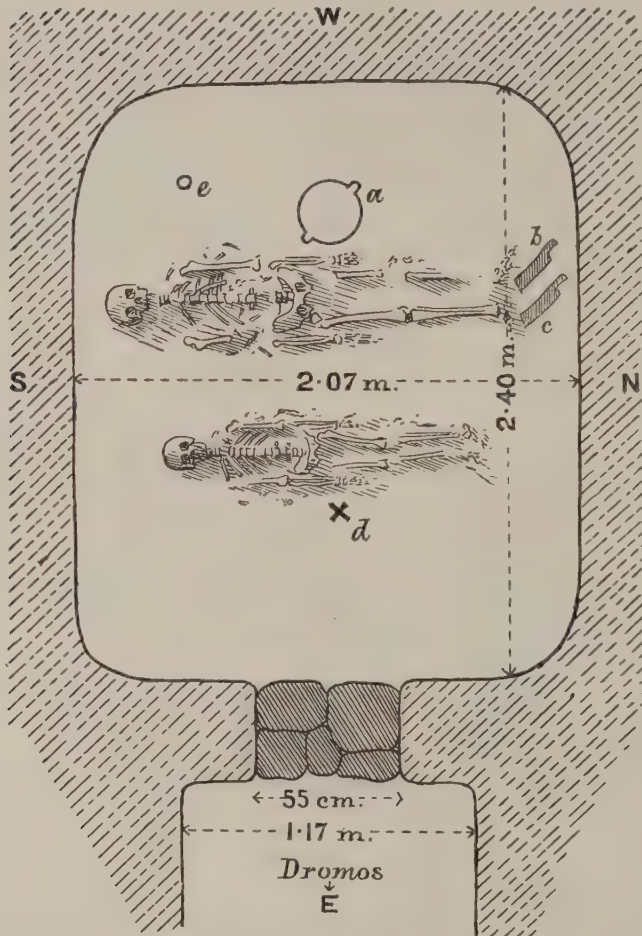


Fig. 43. Plan of Chamber-Tomb (No. 21).

was intact, but a good deal of decomposed rock had fallen from the vault of the chamber, the original height of which was about 1.60 metres. (See plan, fig. 43.)

Within were remains of an adult skeleton, much decayed and showing little of the head, which lay south, except the teeth. A little to the left, together with further remains of a skeleton, lay a very small gold ring, which could only have fitted a child's finger. It is clear, therefore, that a child's body lay by the other, though the decomposed state of the bones and the disturbance caused by the fallen rock had obscured the evidence of age. The razors (*b, c*) at the foot of the adult skeleton seem to indicate that it was that of a man. A small painted bowl and a whorl completed the contents of this poor but un-robbed tomb.

21*a*. Painted bowl with handle and spout. (Fig. 117, 21*a*). The decoration has a late character.

21*b*. Bronze razor of usual type. (Cf. fig. 63). Length 17·2 centimetres, width of blade at end 5·5 centimetres.

21*c*. Similar bronze razor. Length 17·2 centimetres, width of blade at end 6·2 centimetres.

21*d*. Small gold ring with plain bezel. (Fig. 119, 21*d*). The inner diameter of the ring is only 10 centimetres.

21*e*. Steatite whorl of pyramidal shape.

No. 22. *Chamber-Tomb*, much ruined. Fragments of *larnax* in *dromos*.

No. 23. *Shaft-Grave*, lying east and west. The covering slabs of the grave lay at the bottom of an oblong pit and 1·20 metres below the surface. The floor of the grave itself (1·68 metres long by 45 centimetres wide) was 90 centimetres below the roof stones. Nothing was found within but some bones, much decomposed.

No. 24. *Shaft-Grave* similar to the last. No contents but some decayed bones.

No. 25. *Shaft-Grave* of similar character. The covering slabs of the grave seem to have been taken from an earlier building, one of them presenting incised signs of a Middle-Minoan character. (See above, fig. 9.)

The grave below contained decayed bones and a stirrup vase (height 13·3 centimetres) with a chevron pattern. (Fig. 114, 25*a*.)

No. 26. *Shaft-Grave* of similar type, lying north to south. The grave was at the bottom of an oblong pit, about 1·20 metres wide, with ledge at the south end (see plan, fig. 7). The larger of the slabs above the actual grave measured 80 centimetres by 45 centimetres and 60 centimetres by 35 centimetres, and were respectively 16 centimetres and 10 centimetres thick. The grave itself contained nothing but much decayed bones. Remains of skull to south.

No. 27. *Shaft-Grave*, lying north to south. Oblong pit about 2 metres long, with ledge on one side (see plan, fig. 6). The flat stones at the bottom of this, covering the grave, had mostly lost their hold on to the narrow edge along the

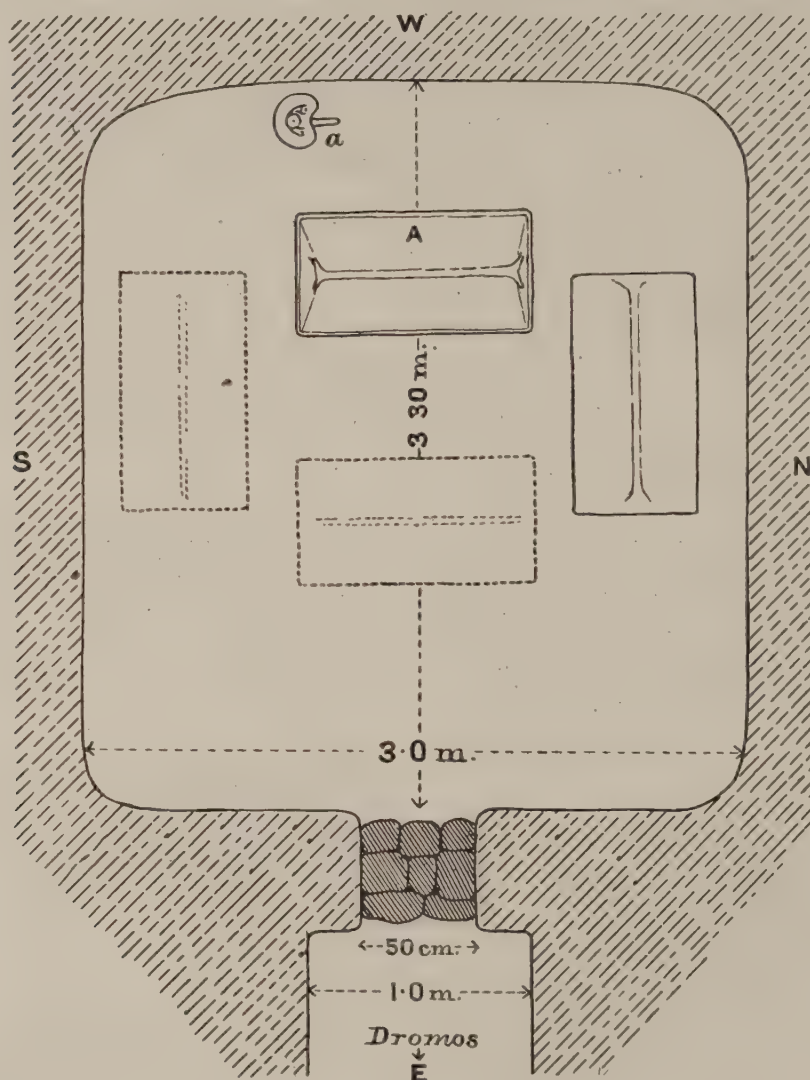


Fig. 44. Plan of Chamber-Tomb (No. 32).

east side of the cavity, and had slipped down on that side, though retaining their order. The bones within were wholly decayed, and the only relics found were a

plain two-handled vase (cf. 118, fig. 70*b*) and a steatite whorl. These lay near the centre of the grave on the west side.

No. 28. *Shaft-Grave* similar to the last. No relics.

No. 29. *Chamber-Tomb*, much ruined. Remains of plain *larnax*.

No. 30. *Shaft-Grave* resembling No. 27. Disturbed and devoid of remains.

No. 31. *Shaft-Grave*, lying north to south. Also disturbed and the covering stones removed. Such bones as were found were much perished. The skull seems to have been at the north end. At the south end lay a leaf-shaped bronze razor, 17 centimetres long. (Cf. Plate XCI. fig. 113, 64*c*.)

No. 32. *Chamber-Tomb*, entrance east, approached by short *dromos*. Although the entrance walling was intact the tomb seems to have been plundered from above. In the *dromos* was found a plain pedestalled cup with one handle (cf. 66*h*, fig. 118) and fragments of Late-Minoan (III.) painted pottery. In the chamber were two plain *larnakes* much broken, and the bones scattered by fallen rock. There were also remains belonging to four other sarcophagi, two of which must have rested on the lower group. For the manner in which these latter seem to have been arranged compare the plan of No. 8, fig. 24. The gable ridges of the covers of the best-preserved chest (A, fig. 44) terminated at either end in a

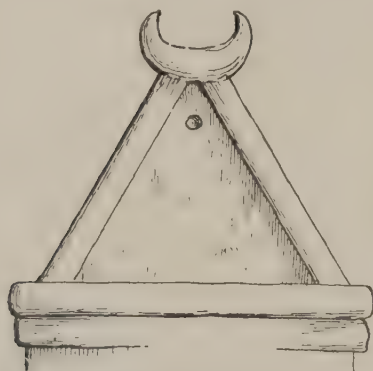


Fig. 45. Horned cover of *larnax* A, from Chamber-Tomb (No. 32).

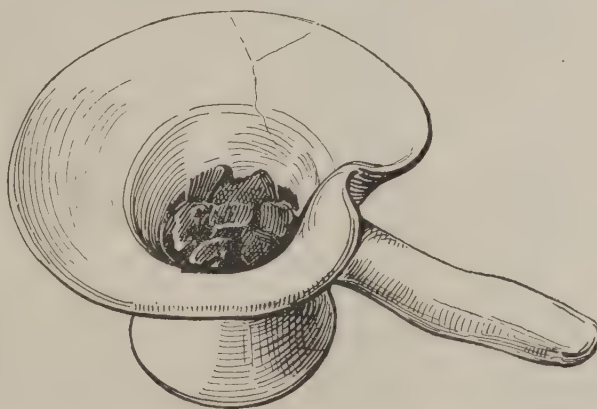


Fig. 46. Clay chafing pan with charcoal, from Chamber-Tomb (No. 32).

pair of horns (fig. 45), an interesting feature suggestive of the horns at the end of the ridge beams of the hut-urns of ancient Latium. Remembering the constant employment of sacral horns of plaster, clay, and stone, in Minoan cult, it is possible that a religious value may have been attached to the horned termination of the sarcophagus. The only objects found in the tomb were a decomposed bronze needle and paste bead found in *larnax* A, and a clay charcoal holder or

chafing pan (fig. 46 and fig. 118, 32, height 15 centimetres) containing some of the coals. It was placed behind the inmost sarcophagus.

No. 33. *Shaft-Grave*, "The Carpenter's Tomb."—Oblong pit, lying north to south, with ledge at south end. The grave itself, 2 metres below the surface level, was covered with well-cut slabs. (For plan and section see figs. 8*a*, 8*b*). The grave (1.65 metres long and 60 centimetres broad and 90 centimetres deep) contained remains of a skeleton with the head to the south. About the middle, together with a leaf-shaped razor, lay the tools of the deceased, evidently an artisan, namely an adze or chisel, and a saw. (See plan, fig. 47.)

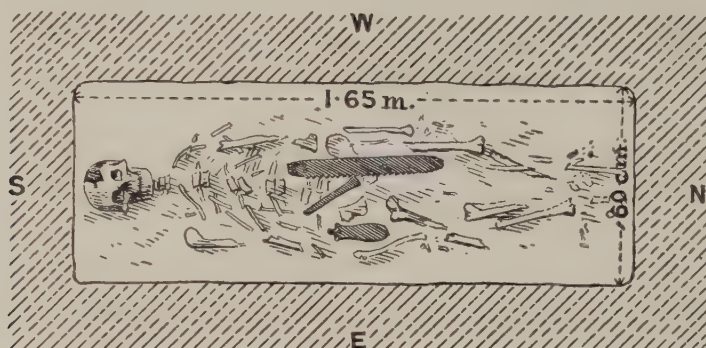


Fig. 47. Plan of the Carpenter's Tomb (No. 33).

33*a*. Bronze saw. Length 48 centimetres, greatest breadth 5.3 centimetres. Larger saws, perhaps in some cases for sawing out gypsum slabs, have been found at Hagia Triada and Gournia. (Fig. 48.)

33*b*. Bronze adze or chisel 24.4 centimetres long, width at edge 4.1 centimetres. (Fig. 49.)

33*c*. Bronze leaf-shaped razor. (Fig. 50.)

No. 34. *Shaft-Grave*.—Oblong pit lying east to west. The covering slabs, which occupied the middle of the bottom of the pit with a space of about 30 centimetres round, proved to have been partly broken in. On removing them the grave was found to be occupied by a *larnax*, which, however, had evidently been rifled. Nothing was found within but disturbed remains of bones, some sherds of rough pottery, and a small piece of bronze wire, perhaps part of a pin. The *larnax* itself was plain, but under one of the gable ends of its cover was cut the sign Δ.

The combination of a shaft-grave with a clay sarcophagus is unique in this cemetery.

No. 35. *Chamber-Tomb*.—Approached on the east by a *dromos* with a steep descent. The *dromos* is about $4\frac{1}{2}$ metres in length, and its width increases from 85 centimetres at the entrance to 1·05 metre immediately outside the door of the chamber. It descends, by a double flight of steps and an incline, to a depth of 3·35 metres below the surface level. The rock-cut side walls of this passage slope in, leaving a space of only 35 centimetres open at top.

The doorway (1·40 metre high, 70 centimetres wide at bottom and 65 centimetres at top) was found blocked by a triple walling. Within the chamber were remains of three skeletons with their heads west. The relics found, including a small bronze jug and two stone bowls, lay near the north and south walls of the chamber. (See plan, fig. 51.)

35a. Small bronze jug, with handle (cf. fig. 100, *h, p*).

35b. Grey serpentine vase in shape of a calyx or flower ("blossom vase"), cf. fig. 100, *e* (diameter 17 centimetres, height 10·5 centimetres).

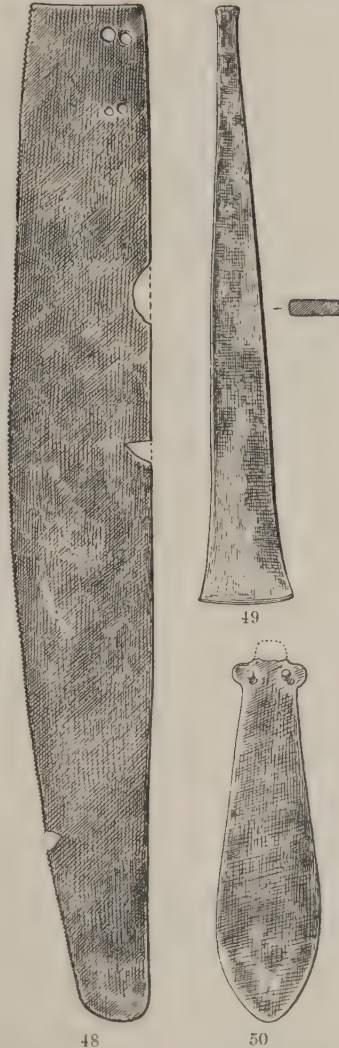
35c. Similar vase (diameter 17 centimetres, height 9·5 centimetres).

35d. Steatite whorls.

35e. Four-sided oblong bead of steatite, with rows of plain circles with central dot.

35f. A natural quartz crystal.

No. 36. *Shaft-Grave*, lying east to west. "The Chieftain's Grave." This exceptionally rich interment has been already referred to as presenting the peculiarity of having part of its funeral furniture above the covering stones of the actual grave. Here were found arranged, as shown in fig. 52, a bronze ewer, saucepan, and two-handled bowl, together with a mirror, a frequent concomitant of male interments, and two spear-heads. The vessels had been a good deal crushed by the weight of the superincumbent earth.



Figs. 48, 49, 50. Bronze objects from the Carpenter's Tomb (No. 33).

In the sepulchral cell below the slabs were the remains of a skeleton with its head to the east. The beads of a gold necklace were found, partly resting on the much-flattened skull; and on the left wrist, showing the manner in which they were worn, lay three lentoid gems with intaglio designs. By the right side was

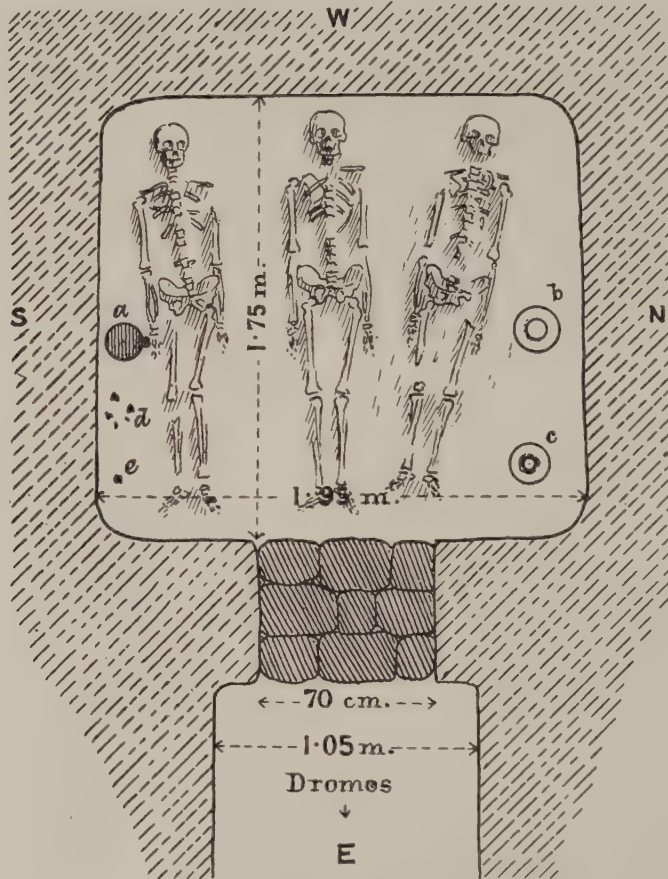


Fig. 51. Plan of Chamber-Tomb (No. 35).

a long sword with ivory pommel and gold-plated studs; and near the position of the right hand lay a short sword or dirk with a beautiful onyx pommel and gold-plated hilt, exhibiting engraved designs of lions hunting wild goats, in a fine, free style. These are the most magnificent arms as yet found in a Minoan grave, and,



Fig. 52. Funeral offerings above the covering slabs of the Chieftain's Grave (No. 36).

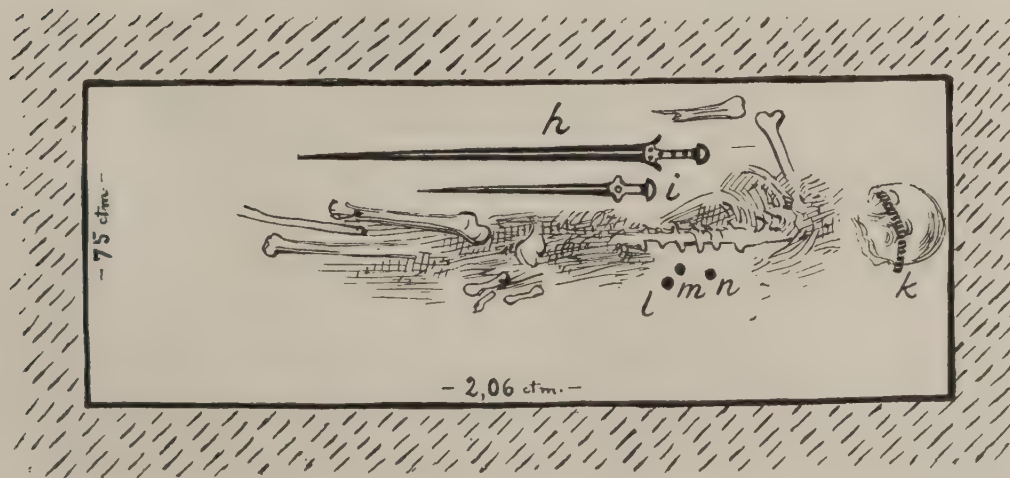


Fig. 53. Plan of the Chieftain's Grave (No. 36).

coupled with the gold collar, they may be thought to warrant the title of the "Chieftain's Grave." A plan of this grave is given in fig. 53. For a section of it, see fig. 10 above.

Objects found above the Covering Slab of the Chieftain's Grave. (See Fig. 52.)

36a. Bronze ewer. Height 50 centimetres, diameter 37 centimetres. (See fig. 52.) The collar and body of this are formed of three plates riveted together. The vessel itself, with its upright handle attached to the rim, and its horizontal handle below, resembles the bronze jug already described under No. 14g. The present vase, however, is distinguished by a decorative adjunct of great delicacy. Two cockle-shells or small scallops in relief are attached to the two extremities of the upright handle, the upper of these being much smaller than the other. (See fig. 54.) Cockles in relief, as an adornment of clay and porcelain vases, occur already in the Middle-Minoan Period. The vase had been considerably distorted by the pressure of the superincumbent earth.

36b. Bronze spouted pan, the two handles of which are provided with knobbed upright projections, like the vessels described under No. 14c, etc. This pan was a good deal crushed, but is reproduced in its original outlines in fig. 52. A bronze pan of similar type occurred in Tomb 8 at Phaestos.^a Two swords were found in the same tomb.

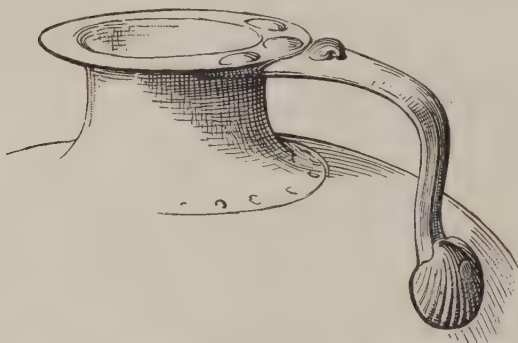


Fig. 54. Upper part of bronze ewer from the Chieftain's Grave (No. 36).



Fig. 55. Bronze frying-pan, and spiral ornament on rim, from the Chieftain's Grave (No. 36).

36c. Small bronze "frying-pan." Diameter 15 centimetres, height of sides 3.8 centimetres, of handle 9 centimetres. (Fig. 55.) The upper edge of the pan has been somewhat beaten out, and a flat circular plate welded on to this, which is adorned with spiral reliefs. (See fig. 55.) A plain "frying-pan" of similar type has been already described under No. 14c, and another was found at Phaestos, also in Tomb 8.^b

^a Savignoni, *op. cit.* 28, and 47, fig. 48.

^b Savignoni, *op. cit.* 28, and 47, fig. 29.

36d. Bronze mirror of usual type. Diameter 15·5 centimetres.

36e. Bronze lance-head with round prominent rib. Length 34·4 centimetres, diameter of base of socket 2 centimetres. There are two holes in the socket for rivets, and signs of a joint are visible along one side. (Fig. 56, and fig. 113, 36e.)

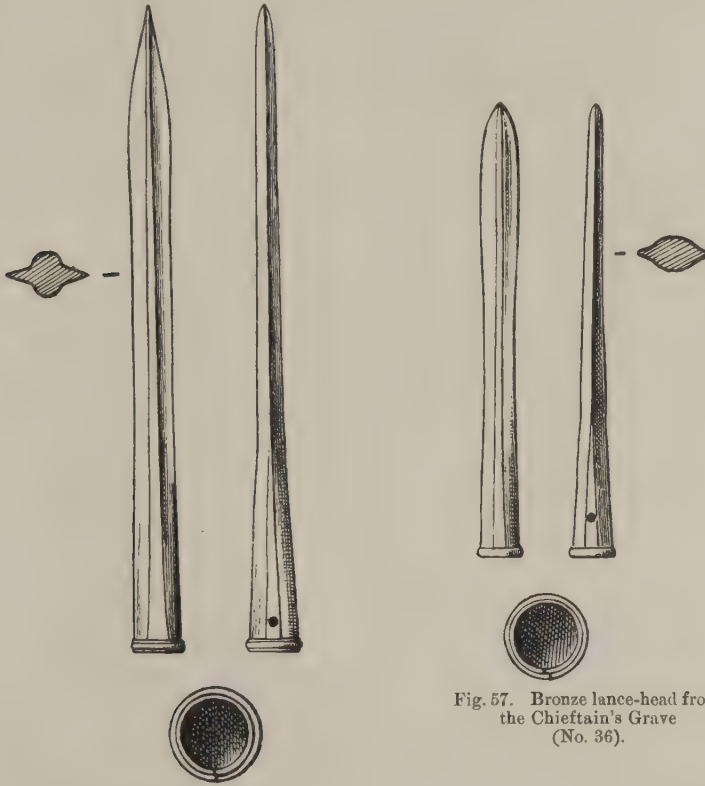


Fig. 56. Bronze lance-head from the Chieftain's Grave (No. 36).

Fig. 57. Bronze lance-head from the Chieftain's Grave (No. 36).

36f. Bronze lance-head (length 26 centimetres) of similar fabric, but with broader rib than preceding. (Fig. 57, and fig. 113, 36f.)

Objects found in the Chieftain's Grave below Slabs.

36h. Bronze sword of pointed form, for thrusting, with ivory pommel; length without pommel 94·5 centimetres, with pommel 95·5 centimetres. The ivory pommel, of which a small part was decayed, is fixed by a cross rivet of bronze, and round its base is a gold

collar. The wooden mounting of the hilt was secured on each side by five large gold-plated studs. A minute but very fine decoration, consisting of double rows of connected

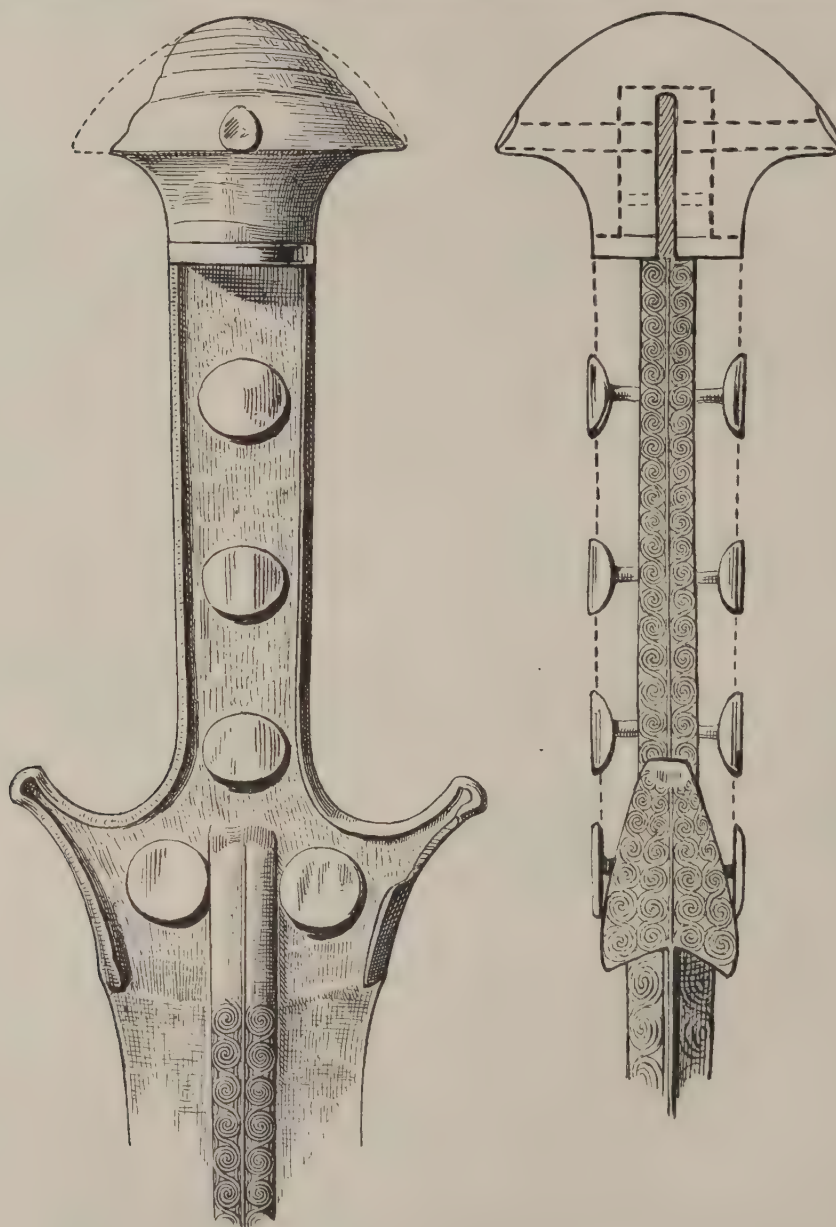


Fig. 58. Upper part and side view of a bronze sword from the Chieftain's Grave (No. 36).

spirals in relief, runs along the sides of the hilt and the central rib of the blade. (Fig. 58, and fig. 109 36*h*.) The entire sword is shown in fig. 112*b*, below.

36*i*. Short bronze sword, also for thrusting, with agate pommel. Length with pommel 61 centimetres. The pommel, which is of beautifully banded translucent agate, is 4·4 centi-

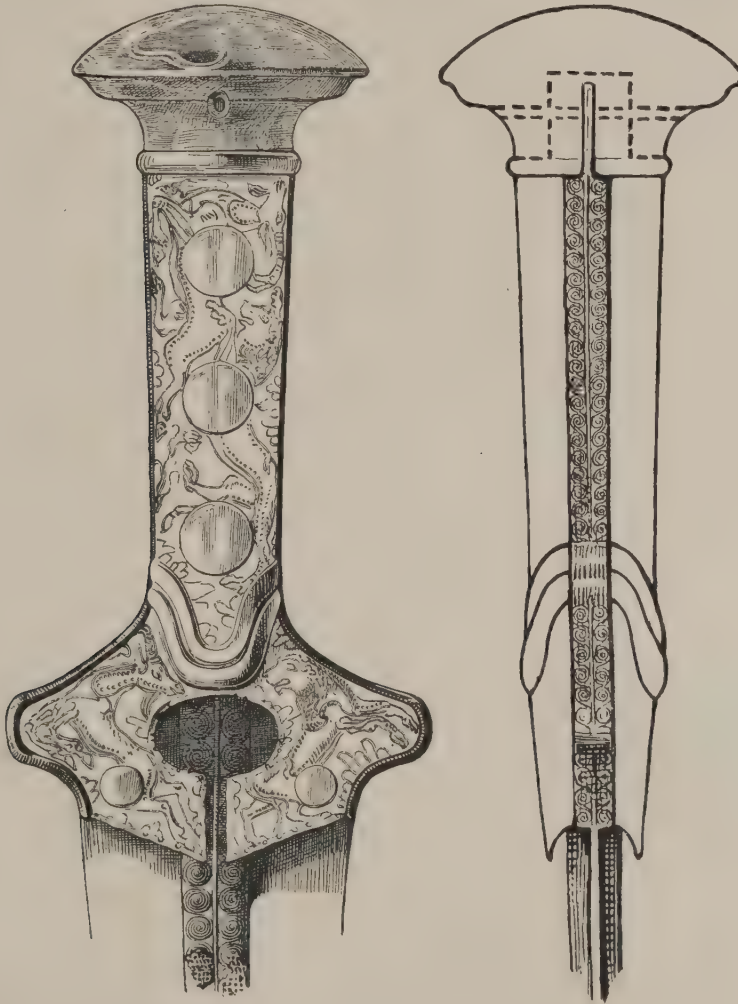


Fig. 59. Upper part and side view of a gold-plated sword from the Chieftain's Grave (No. 36).

metres in diameter, and is perforated in order to be fixed to the hilt with a bronze rivet. Its base is surrounded by a gold collar. The hilt on both sides is covered with gold plates attached by five gold-plated rivets. These plates seem to have originally had

a thin wooden backing, and minute rivet holes for attachment to these are seen along the borders of the oval opening near the lower end of each plate.

The plates are divided by a curved moulding into an upper and lower field, each engraved with very spirited designs of lions and wild goats. (Fig. 59.) The lower field shows a lion and a Cretan wild goat or *agrimi*, looking back at each other, the *agrimi* in the act of springing, the lion as if starting in pursuit. On the borders above and below are indications of rocks. In the upper field we see the sequel to the other. The lion has gripped the hind-quarters of the he-goat with one paw, arresting its flight, while, with the other raised, he prepares to bring it finally to the ground. We have here the same rocky landscape, the rocks above represented in a downward position in accordance with the conventional method of perspective constantly employed by the Minoan artists. From the ground below the lion rises a bell-shaped flower, apparently a tulip, such as still grows wild in the Cretan valleys. The design itself, in spite of the cramped conditions under which it was composed, is of singular force and naturalism, and the unavoidable effacement of part of the outlines by the discs of the rivet holes has been dealt with in such a way as to preserve the more important features.

The sides of the hilt and the central rib of the blade are covered as in the case of the preceding sword with double rows of spirals of microscopic fineness in relief. Remains of linen tissue, probably belonging to the shroud, are seen attached to parts of the blade. (See figs. 59 and 110b.)

36k. Gold necklace, consisting of 18 beads of thin gold plate, repeating an embossed design derived from a double argonaut (*argo argonauta*). (Fig. 60 and fig. 119, 36k.) The



Fig. 60. Gold beads of necklace from the Chieftain's Grave (No. 36). ($\frac{3}{4}$.)



Fig. 61. Agate lentoid bead with intaglio, from the Chieftain's Grave (No. 36). ($\frac{3}{4}$.)

design resembles that presented by the gold necklace found in Grave No. 7, but in the present case the relief is finer. As noticed above, under No. 7, necklaces with gold beads, showing a similar pattern, were found in tombs at Phaestos and elsewhere. One such occurred in the *dromos* of a tomb (No. 8) of the Lower Town at Mycenae,^a containing a fibula of the early fiddle-bow type.

^a Tsountas, 'Εφ. Αρχ. 1888, plate ix. 4, p. 139.

36l. Agate lentoid bead with intaglio in a fine bold style showing a horned sheep, perhaps a mouflon, attached by a cord to a column with a spiral shaft. In front of it is a spray (fig. 61). The spiral column is shown on another contemporary intaglio, standing on a base with two lion supporters. It seems probable that the present device has a religious signification, and that the animal here must be regarded as sacred to a divinity.

36m. Onyx lentoid bead with intaglio of careless execution representing a lion with an arrow sticking into his shoulder.

36n. Cornelian bead of amygdaloid type, with roughly cut intaglio showing an octopus and three sprays.

No. 37. *Pit-Cave*, lying north to south. It had a very small sepulchral cavity (1 metre by 70 centimetres) as compared with the shaft (1·95 metre by 90 centimetres). Much decayed human bones together with a bead and whorl formed the whole contents.

No. 38. *Chamber-Tomb*, entrance to the east. The entrance, approached by a short steep *dromos*, was found closed. Outside it, in the *dromos*, was a plain clay bowl. The chamber, about 2 metres east to west and north to south, was of somewhat rounded outline. The bones were completely decayed, but near the west border of the tomb was a bronze razor of the usual type (cf. fig. 43), 12·2 centimetres long, and two hones, one square the other oblong.

No. 39. *Chamber-Tomb*.—The whole roof of this had been denuded, and what remained of the interior disturbed. The entrance, to the east, was open. Near the north wall was an empty *larnax* which presented the exceptional feature of having a flat cover.

No. 40. *Ruined Chamber-Tomb*, with *dromos* to east and remains of double walling in the entrance. No finds.

No. 41. *Pit-Cave*, lying north to south. The pit descended to a depth of 3·10 metres. The walling of the sepulchral cavity, which lay on the west side of the shaft, was found intact, but its vault had fallen in. The grave was 2·60 metres long by 84 centimetres broad. It contained only a small fragment of bone, and near the middle fourteen plain globular beads of blue paste, a globular gold bead formed of two hemispheres of thin plate joined together, and a crystal lentoid bead.

No. 42. *Shaft-Grave*, lying north to west. The shaft (1·90 metre long by 1·10 metres broad) had a ledge at the east end. The covering slabs of the grave, which were rough or very little worked, lay at a depth of 2·10 metres below the surface level, the total depth to the bottom of the grave being 3·10 metres. The

grave (see plan, fig. 62) contained remains of a skeleton with the skull east. On the right side of the skeleton lay a sword with gold-plated studs, two razors, and a hone.

42a. Bronze sword, 58·5 centimetres long. There were no remains of the pommel except the gold collar that surrounded its base. It was evidently of some perishable

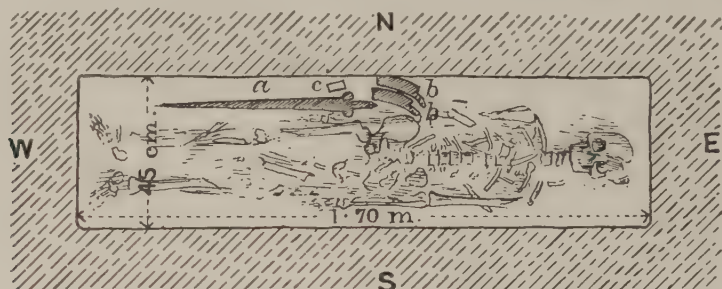


Fig. 62. Plan of Shaft-Grave (No. 42).

material, probably ivory, like that of Grave No. 36. The studs that originally attached to plates of the hilt were plated with gold. As in the other cases double lines of minute connected spirals ran along the sides of the hilt and the rib of the blade. (See below, fig. 109, 42a).

42b, b. A pair of bronze razors each 23 centimetres long. They are somewhat more curved than usual. (Fig. 63.)

42c. Oblong hone.



Fig. 63. Bronze razor from Shaft-Grave (No. 42).

No. 43. *Pit-Cave*.—Pit lying north to south (1·85 metres long, 95 centimetres wide, and 3 metres deep). Along the eastern side of the pit runs a ledge 45 centimetres wide and 1 metre below the surface level. The entrance

to the sepulchral cavity, which was on the west side of the pit, was 1 metre wide on the floor level, and was closed by a double walling. The roof of the cavity was found to have collapsed, causing a good deal of disturbance, and the bones were quite decayed.

Near the middle of the grave was found a short sword, a razor, and at a higher level a knife. From the position of the sword the head of the skeleton seems to have been at the southern end.

The sepulchral cavity was in this case over twice as long as the width of its

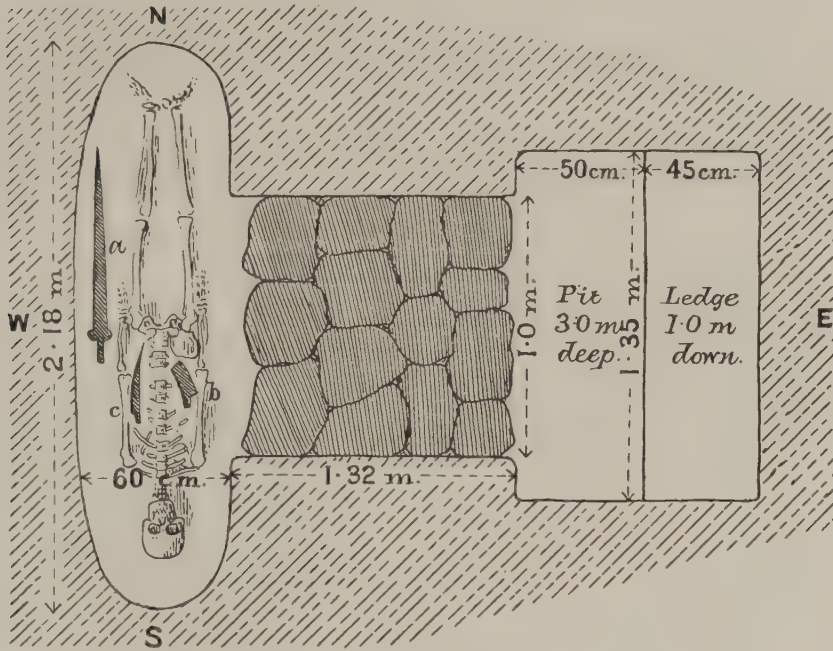


Fig. 64. Plan of Pit-Cave (No. 43).

entrance: 2.18 metres, namely, as compared with 1 metre. This peculiarity gave it somewhat the appearance of a truncated chamber-tomb. (See plan, fig. 64.)

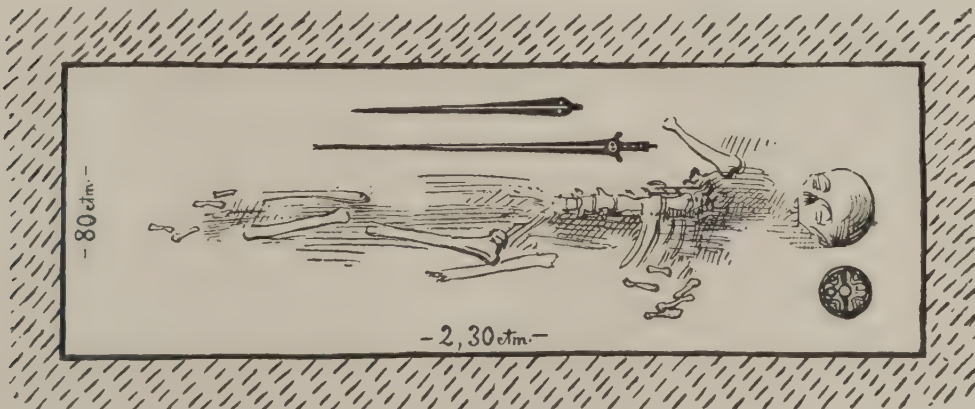


Fig. 65. Plan of Shaft-Grave (No. 44).

43a. Short bronze sword. Length 50 centimetres. (Fig. 109, 43a.) In type it closely resembles that of the sword found in Grave No. 42, but there is no trace of spiral decoration. The central rib of the blade shows minute flutings.



43b. Bronze razor of usual form, length 19 centimetres.

43c. Bronze knife of the usual type. The point is wanting, but the original length seems to have been 32 centimetres.

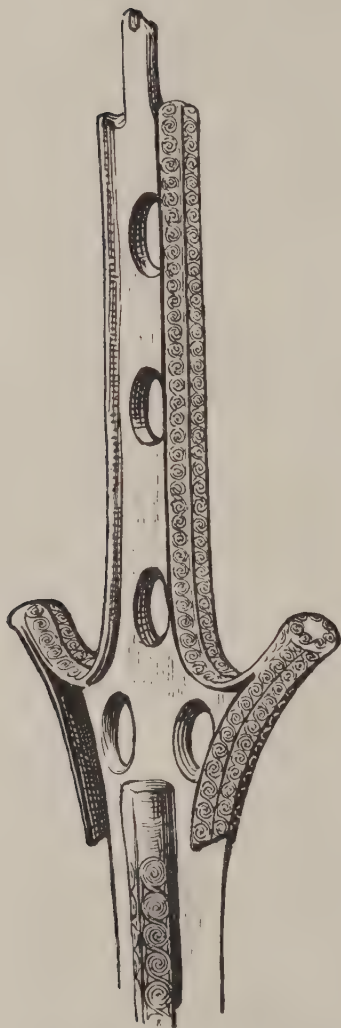


Fig. 66. Upper part of bronze sword, and one of the rivets, from Shaft-Grave (No. 44).

No. 44. *Shaft-Grave*, lying east to west. The grave itself was covered by four exceptionally well-wrought slabs, the upper faces of which lay about 2 metres from the surface. The sepulchral cell beneath them was 1·30 metres deep, its bottom being 3·55 metres beneath the surface of the ground. Near the head of the skeleton, which lay to the east, was a painted stirrup-vase, and by the right side a long and short sword. (See plan, fig. 65.)

44a. Bronze sword, 91·3 centimetres long, with double lines of minute spirals in relief on the sides of the hilt and the rib of the blade and traces of a revolving ornament on the studs. In type this sword closely resembles 36h, fig. 58. The upper part of the sword is shown in fig. 66. The fuller outline of it is given in fig. 110a below, and in Plate XCI. fig. 109. (The upper terminations of the shoulders were omitted in the photograph from which this latter figure is taken.)

44b. Bronze short sword, 53 centimetres long, fig. 66, and fig. 109, 44b. Unlike the preceding types the hilt of this sword terminates in a pointed tang in the middle of which there is a rivet to fix the pommel. Some fragments of an original ivory plating were found attaching to the hilt.

44c. Painted stirrup-vase (fig. 67). The foliate band, in a somewhat decadent style, that runs round the shoulder of the vase, resembles that of 51a (fig. 114).

No. 45. *Pit-Cave*, lying east to west. The

sepulchral cavity lay on the south side of the pit. Nothing was found within but remains of a skeleton with the head west.

Nos. 46, 47. *Ruined Chamber-Tombs*.—No relics.

No. 48. *Pit-Cave*, lying north to south. The sepulchral cavity contained nothing but a few fragments of bone and a steatite whorl.



Fig. 67. Painted stirrup-vase from Shaft-Grave (No. 44).

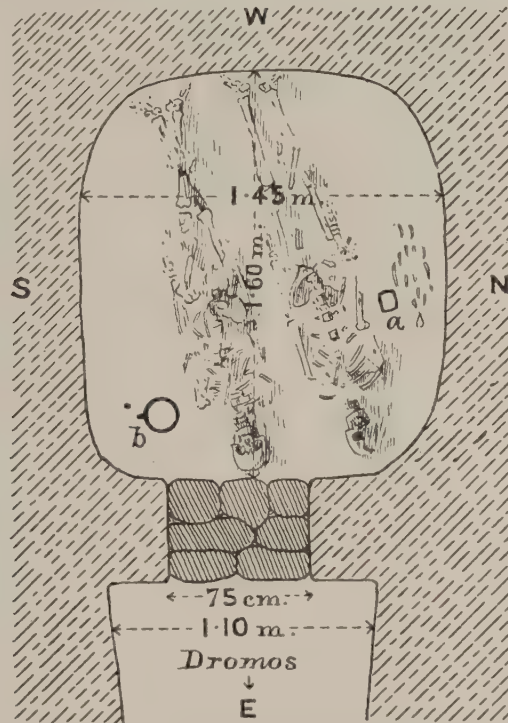


Fig. 68. Plan of Chamber-Tomb (No. 49).

No. 49. *Chamber-Tomb*.—The entrance was to the east, approached by a short *dromos*. The double walling of the entrance was found intact, but the vault of the chamber itself had fallen in. Remains of three skeletons were found within, two of them in an extended position, but the bones of the third lay in a confused heap against the north wall. It looked as if they had been displaced to make room for later occupants. The relics found were an ivory mirror handle and a steatite cup. (See plan, fig. 68.)

49a. Ivory mirror handle, presenting on one side a sphinx in relief, and with two perforations for rivets. No traces of the mirror itself were found. (Fig. 69.)

49b. Cup of grey steatite with round upright handle. Diameter 4·5 centimetres, height 2·5 centimetres.



Fig. 69. Ivory mirror-handle from Chamber-Tomb (No. 49). (†.)

No. 50. *Ruined Chamber-Tomb*.—Entrance to east broken open. Inside the chamber were remains of two broken *larnakes* to right and left of the entrance. That to the right contained bones and remains of two skulls, apparently indicating that a second sepulture had taken place in it, when the body originally deposited within was reduced to a skeleton. A plain clay cup was also found in it. In the *larnax* to the left there were some bones and remains of a skull.

No. 51. *Pit-Cave*, lying north to south. The pit descended 2·70 metres with a ledge at south end about 1 metre from bottom. It presented the peculiarity of having been cut into on its east side by a later *tholos*, No. 52. The sepulchral cavity on the west side of the pit was blocked by a double walling 1·80 metres high in centre and 1·70 metres wide. The grave inside contained remains of a skeleton with its head north. By the head was a stirrup-vase, and a smaller one, together with three knives and a leaf-shaped razor, lay near the middle of the body. (See plan, fig. 70.)

51a. Stirrup-vase, 26 centimetres high. (Fig. 114, 51a). Spiral and other decoration above and foliated band round the body. It much resembles 55d.

51b. Small stirrup-vase (fragmentary). It has a scale pattern above.

51c. Bronze knife, ordinary type, 22·8 centimetres long. (Fig. 71.)

51d. Similar bronze knife broken.

51e. Bronze leaf-shaped razor with three rivet holes for handle, 17·5 centimetres long. It resembles fig. 78.

51f. Smaller bronze knife, 16·3 centimetres long. (Fig. 71.)

No. 52. *Chamber-Tomb*.—The chamber of this tomb was entered from the pit of the preceding grave into which the upper part of the vault had slightly cut. The entrance was on the east side and the walling seemed to be intact. Nothing, however, was found within beyond remains of a skeleton with the head east.

No. 53. *Small Chamber-Tomb*, with closed entrance to east but without

relics. Remains of a skeleton were found, lying diagonally, with the head in the south-west corner and the feet to the north-east.

No. 54. *Chamber-Tomb*.—This was much ruined and had been entered from above. The entrance was to the east, and on the north side of the chamber was a plain *larnax* without lid or contents and a small unpainted vase beside it. On the south side lay a heap of bones, which had apparently been thrown out of the

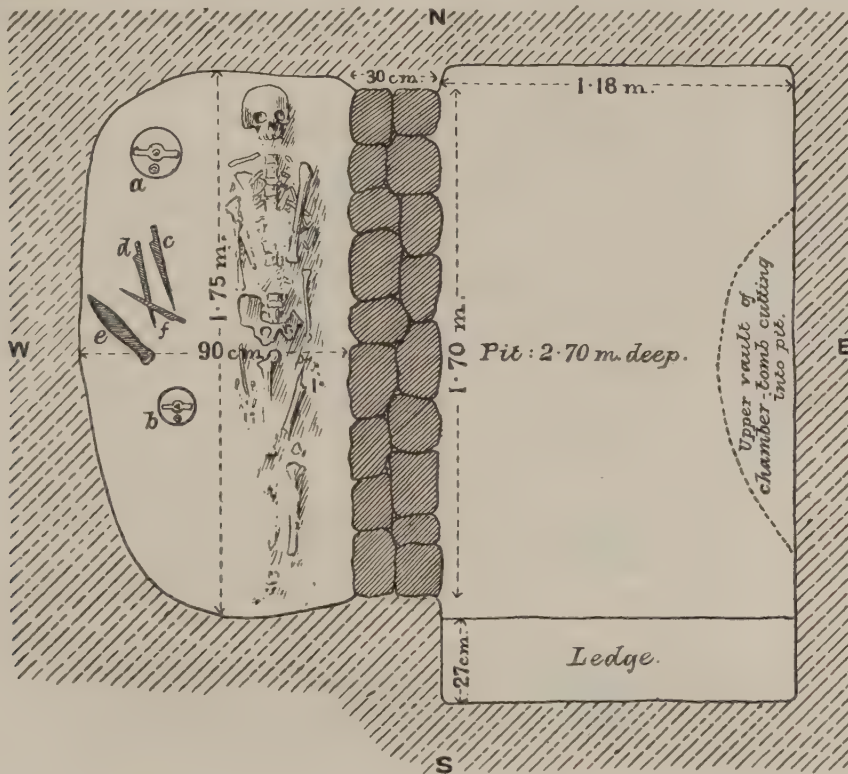


Fig. 70. Plan of Pit-Cave (No. 51).

sarcophagus, together with a perfect stirrup-vase (*a*) and small two-handled vessel (*b*).

54*a*. Stirrup-vase. Height 13 centimetres, diameter 16 centimetres. It is decorated above with painted sprays in a decadent style. (Fig. 114, 54*a*.)

54*b*. Small two-handled pot, 6.5 centimetres high, with painted spiral pattern. (Fig. 117, 54*b*.)

54*c*. Small one-handled vase, with spout 6 centimetres high, covered with plain buff slip. (Fig. 117, 54*c*.)

No. 55. *Pit-Cave*, lying north to south. The wall of the sepulchral cavity, approached by a pit 4·20 metres deep, was found intact except where slightly disturbed at top by the falling in of part of the vault. The original height seems to have been about 1·50 metres. A decayed skeleton lay within with the head north. A sword, spear-head, and knife lay on the right side, and at the feet was a large stirrup-vase and perforated boar's teeth, apparently belonging to a leather helmet. (See plan, fig. 72.)

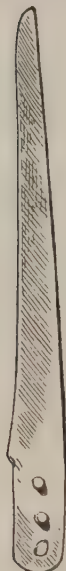


Fig. 71. Bronze knife from Pit-Cave (No. 51).

55a. Bronze sword, 63 centimetres long. Its hilt shows remains of ivory mounting. The blade is strengthened by a broad central stem, and showed traces of engraved lines running parallel to the edges. (Plate XCI. fig. 109, 55a.)

55b. Bronze knife of usual type.

55c. Bronze spear-head, 24·4 centimetres long. Diameter of socket 2·5 centimetres. It has an exceptionally flat blade. (Plate XCI. fig. 113, 55c.)

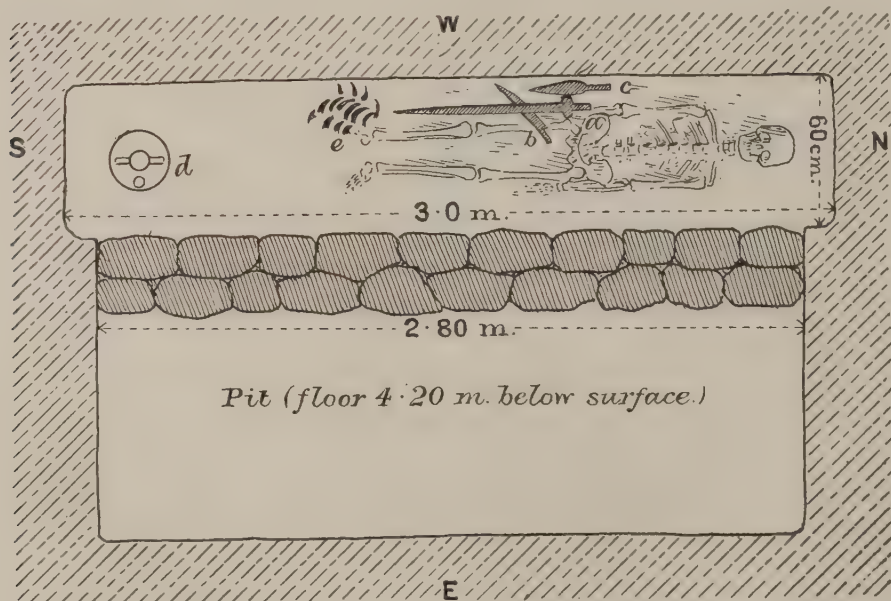


Fig. 72. Plan of Pit-Cave (No. 55).

55*d*. Painted stirrup-vase, 34 centimetres high. It shows spiral sprays above, and round the shoulder a slightly decadent foliate band. (Fig. 73 and fig. 114, 55*d*.)

55*e*. A quantity of boars' tusks cut and perforated for attachment to some object. These recall those found by Dr. Schliemann in the fourth shaft-grave at Mycenae. From the ivory head found by Tsountas in a tomb of the Lower Town at Mycenae^a there can be little doubt that these objects formed the mountings of a leather helmet.

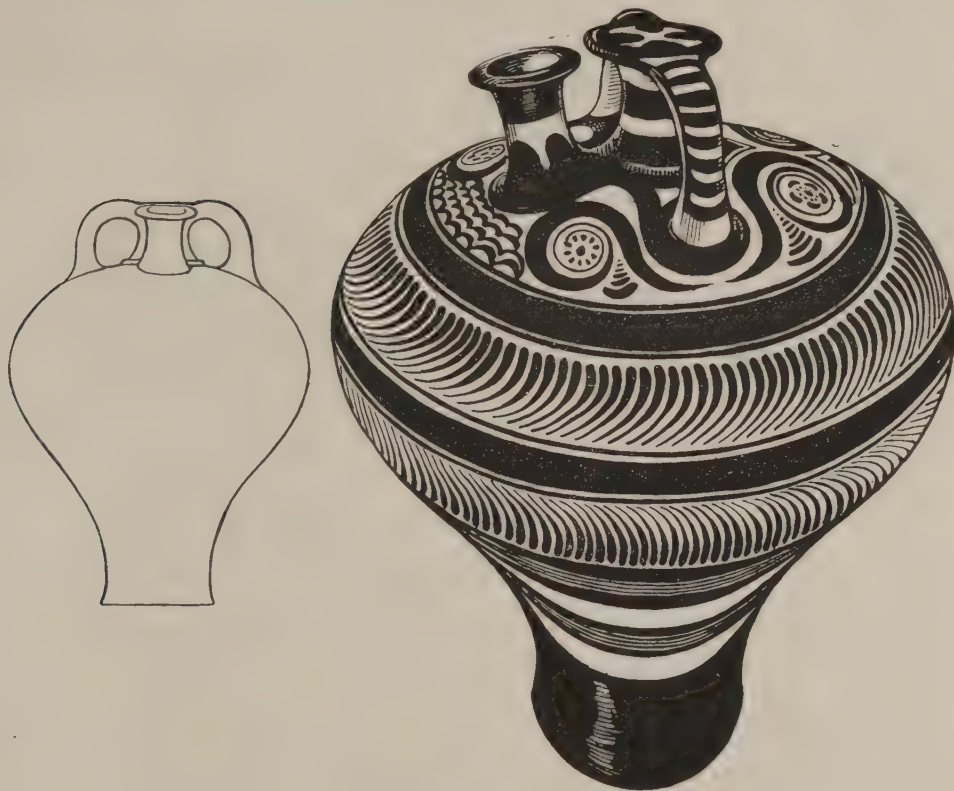


Fig. 73. Painted stirrup-vase from Pit-Cave (No. 55) and outline of contour of same.

No. 56 *Chamber-Tomb*, found open and with the entrance (on the east) much ruined. Within, on the right side, stood a *larnax*, partly broken, containing bones. At the west end of this, by the remains of the skull, stood a small stirrup vase (*a*), and on the opposite or south side of the chamber a small fragment of a clay sealing showing part of an animal was discovered. A large number of such

^a 'Εφ 'Αρχ. 1888, pl. viii. 12, and cf. Reichel, *Homerische Waffen*, p. 120 *seqq.*

sealings were found in the royal tomb at Isopata to be described below, and it is probable that here as there they were used for securing a casket containing valuables.

No. 57. *Shaft-Grave*.—The slabs of this were apparently undisturbed, but nothing was found in it.

Nos. 58, 59. *Disturbed Shaft-Graves*, without relics. The head in No. 59 to the north.

No. 60. *Exceptionally small Chamber-Tomb*.—Only just large enough to contain a *larnax*. It was approached on the south by a short *dromos* with three steps. The tomb had been plundered and the lid of the *larnax* broken.

No. 61. *Shaft-Grave*.—Disturbed. In the pit was found a fragment of a painted vessel showing a foliated band, in a somewhat decadent style.

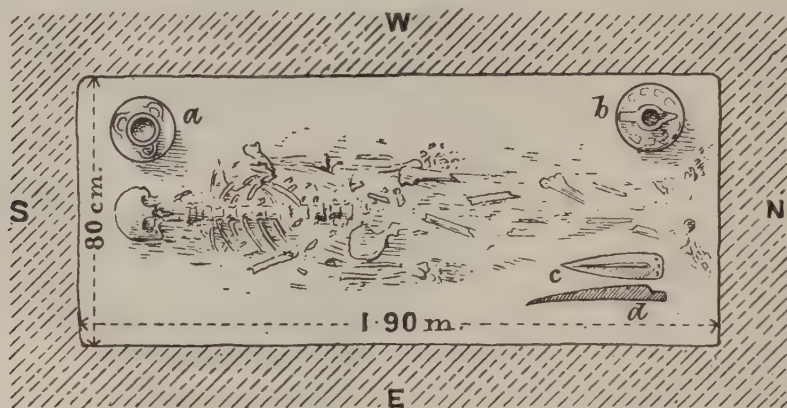


Fig. 74. Plan of Shaft-Grave (No. 62).

No. 62. *Shaft-Grave*, lying north to south. The shaft had a ledge at its north end. The grave was covered by five slabs and its floor lay 2.25 metres beneath the surface. Within was a skeleton with its head south. By the head was a three-handled amphora, and a painted jug, a dagger, and a knife had been placed at the feet. (See plan, fig. 74.)

62a. Three-handled "amphora" of type resembling fig. 117, 12a, but much broken.

62b. One-handled painted jug, with raised ring round the attachment of the neck. (Fig. 75 and fig. 117, 62b.) The pattern round the shoulder approaches that on 55d.

62c. Bronze dagger, 19.2 centimetres long and 5 centimetres broad at the hilt, which has three rivet holes. (Fig. 76.)

62d. Bronze knife of the usual type, 22.3 centimetres long.

No. 63. *Shaft-Grave*.—No relics.

No. 64. *Pit-Cave*, lying north to south. The access to the grave was by a shaft 2·50 metres by 1·50 metre at its opening, stepping down in ledges to a depth of about 4 metres. The entrance arch of the sepulchral cavity had somewhat collapsed at the top, but its original height was over 2 metres, and the walling had not been broken into. Within were remains of a skeleton with the

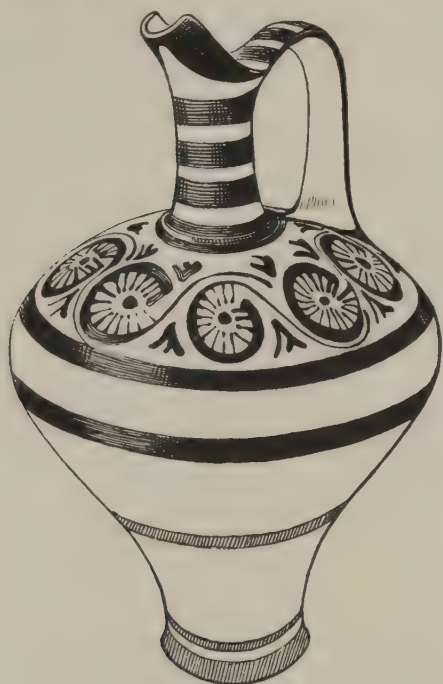


Fig. 75. Painted vase from Shaft-Grave (No. 62).



Fig. 76. Bronze dagger from Shaft-Grave (No. 62).

head south. Two knives and a leaf-shaped razor had been placed by the right side, and two clay vases lay at the feet. (See plan, fig. 77.)

64a. Painted clay vase with a single handle and a slightly raised ring at the spring of the neck. The striation round the shoulders seems to be a decadent derivative of a band of foliage. Height 29 centimetres. (Fig. 117, 64a.)

64b. Stirrup-vase, much broken, with sprays of late character. (Fig. 114, 64b.)

64c. Exceptionally elongated bronze knife with a slight flange to the hilt and three rivets. Length 34 centimetres. (Plate XCI, fig. 113, 64c.)

64d. Bronze knife of usual type, 20·7 centimetres long.

No. 66. *Pit-Cave*.—The general plan and section of this tomb are given above, figs. 11a, 11b, 11c. The sepulchral cavity contained remains of a skeleton with its head south. A necklace of gold beads lay about the neck and breast, and remains of two other chains of beads of glass and glazed paste respectively on either side of the legs. Near the position of the right hand was a small gold ring, and lower down a cylinder of Egyptian porcelain. A row of small clay vessels ran along the left border of the grave, and on the right side was a small glass bottle unfortunately much decayed. By



Fig. 78. Bronze leaf-shaped razor from Pit-Cave (No. 64).

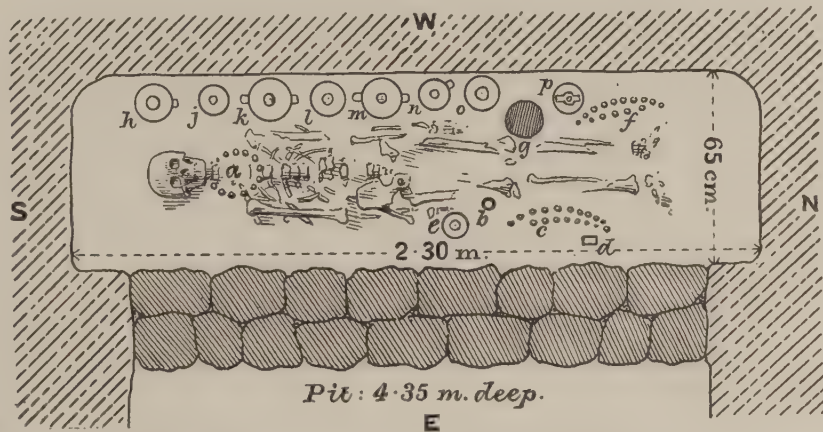


Fig. 79. Plan of sepulchral cell, Pit-Cave (No. 66).



Fig. 80. Gold beads of necklace, from Pit-Cave (No. 66). (3.)



Fig. 81a. Glazed paste bead from Pit-Cave (No. 66). (4.)

the left hand was a bronze mirror. (See plan, fig. 79.)

66a. Necklace of 46 gold beads with rosette ornament and double perforation for threads (fig. 80 and fig. 119, 66a). Similar gold beads were found in a tomb at Phaestos (Savignoni, *op. cit.* p. 103, fig. 62).

66b. Small gold ring with plait-work ornament. (Fig. 119, 66b.)



Fig. 81b. Faience cylinder from Pit-Cave (No. 66).

66c. Chain of beads (thread decayed) of glazed paste with ribbed decoration. (Fig. 81a.)

66d. Cylinder of faience or Egyptian porcelain (2.4 centimetres high, diameter 1.1 centimetre). It is of a yellowish hue and is incised with rude representations of standing figures, spear-like objects, and a stag. (Fig. 81b.) Cylinders of analogous type are found in Lower Egypt, some of them showing ibexes with their heads looking backwards, in a very similar style. The stag, however, is not an Egyptian animal, and faience cylinders of a similar type are also found in Palestine. One of these from Lachish^a shows what appear to be three stags in a similar position, and it seems probable that we must look to that region for the source of the present cylinder.

66e. Globular bottle of amber-coloured glass, unfortunately much decayed. About 6.5 centimetres high.

66f. Globular glass beads of ambery hue, also much decayed.

66g. Bronze mirror.

66h. Pedestalled clay cup with one handle, height 10.3 centimetres (fig. 118, 66h). It bears traces over its pale buff slip of a coating of a kind of black, imperfectly fixed, varnish.

66j. Cup, 5.5 centimetres high (fig. 118, 66j). It bears traces of a wash of red and blue colour over its buff slip, not apparently of a permanent nature.

66k. Two-handled bowl, diameter 14.6 centimetres (fig. 118, 66k). This bears traces of having been painted over with crimson, red, and azure blue in the same way as the preceding. These brilliant hues, superadded to the original plain wash of the vessel, and imperfectly fixed, may have served the purposes of funereal show.

66l. Plain bowl, much broken.

66m. Two-handled bowl resembling *k*, and coloured in a similar way.

66n. Pedestalled clay cup, like *h*, but broken.

66o. Fragmentary bowl, as *l*.

66p. Small spouted vase (height 5.60 centimetres), with glazed painted decoration, brown on buff of the usual Mycenæan character. It presents a chevron band with sprays. (Fig. 117, 66p.)

No. 67. *Pit-Cave*.—The shaft of this grave, with a ledge on its west side (see plan, fig. 82), had been cut in the soft rock with exceptional neatness. The cave opening, with the wall intact (1.70 metres high), was on the east side of the pit. Within were scanty remains of a skeleton, the head north, with four clay vessels on its right side, and on the left a bronze mirror and two paste beads. The mirror lay considerably above the floor level. The beads and vases corresponded in character to specimens found in the preceding Pit-Cave, No. 66.

67a. Two-handled clay bowl, diameter 18 centimetres. It bore traces over its pale ochreous wash of a coating of black varnish, like 66h. The form of this bowl corresponds with 66k and *m*.

^a Bliss, *Mound of Many Cities*, 79, figs. 126, 127.

67b. Pedestalled clay cup, with a single handle. Height 13 centimetres. This cup exactly resembles 66h, and, like it, had been coated with a black varnish.

67c. Pedestalled clay cup, as b.

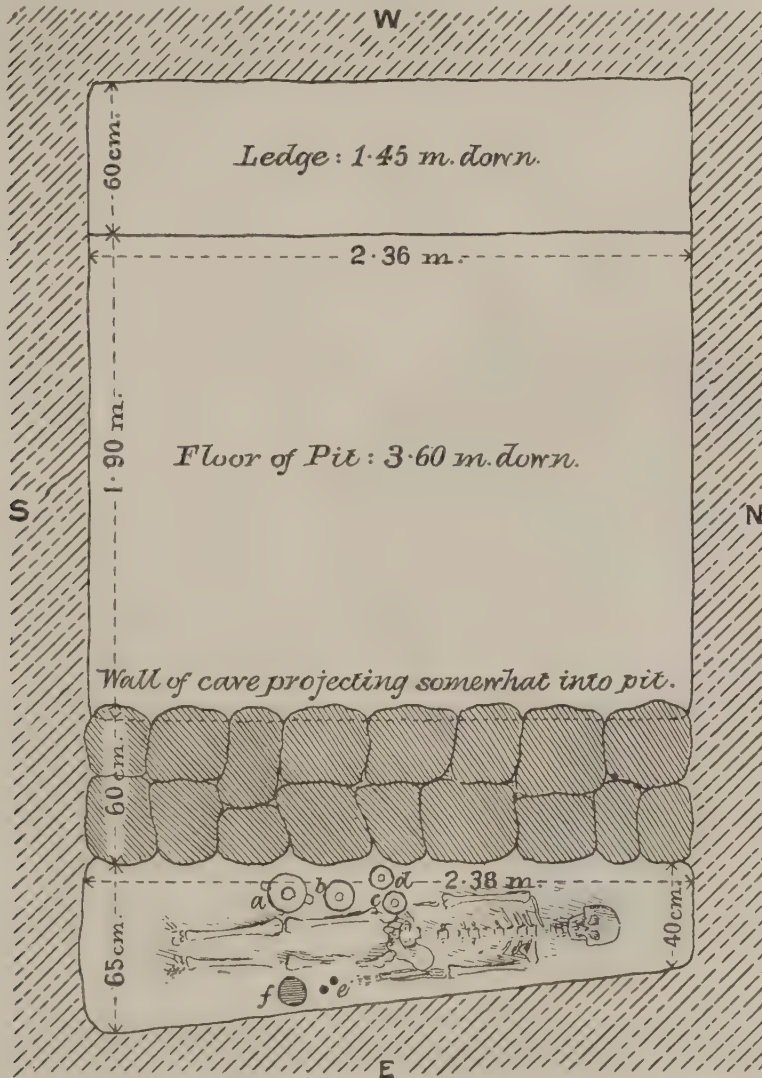


Fig. 82. Plan of Pit-Cave (No. 67).

67d. Small plain cup, as 66j.

67e. Two paste beads, with ribbed decoration, as 66c.

67f. Bronze mirror of the usual type.

No. 68. *Shaft-Grave*, lying east to west. The area about this spot had been evidently somewhat denuded, and the covering slabs of the tomb lay almost on the surface level. The bottom of the grave was 85 centimetres beneath the surface. It was found to overlie the entrance and part of the vault of a chamber-tomb (No. 69 below), the floor of which was 1·70 metre under that of the shaft-grave. This leads to the inference that the shaft-grave here, though containing a stirrup-vase (*c*) of a very good period, was later than the chamber-tomb.

The bones in this grave had been absolutely reduced to dust, so that the position of the skeleton remains uncertain. The vases *b* and *f* and bone stud *c*

were found near the east end of the grave a little on the north side. The mirror lay near the centre of the grave on the south side, and the other bronzes near the west end.



Fig. 83. Painted stirrup-vase from Shaft-Grave (No. 68).

68*a*. A leaf-shaped razor of bronze, as fig. 78, length 15·5 centimetres.

68*b*. Painted stirrup-vase, 35 centimetres high. (Fig. 83 and fig. 114, 68*b*.) This vase is remarkable from its fine style of decoration. On the upper surface is a raised decoration like a Mycenæan shield, and rosettes recalling those in a similar position on the large stirrup-vase from the Royal Villa.^a The beautiful foliation round the shoulders, with its many times reduplicated edging, is a ceramic adaptation from the foliated chasing of bronze vessels, such as the bowl from the North-West Building at Knossos.^b The same reduplication accompanies the foliate band round

the shoulders of a magnificent amphora of the Palace Style, from the Royal Tomb

^a Knossos, *Report*, 1903, p. 137, fig. 87*a*.

^b *Ibid.* p. 124, 125, figs. 77, 78. The parallel, however, is much closer than can be made out from these figures.

described below. The trefoils of the lower part of the vase are also frequently found on vases of the Palace Style. These comparisons may be taken to show that the fabric of the fine vase with which we are dealing must be referred to the latest Palace Period of Knossos. The style belongs to Late Minoan II.

68c. Bone stud with hemispherical knob.

68d. Bronze tweezers with broad end.

68e. Exceptionally thin bronze mirror, diameter 16·5 centimetres.

68f. Small spouted vase with one handle, 10 centimetres high. It is quite plain and resembles the type 6b.

No. 69. *Chamber-Tomb*, with entrance to the east. The shaft-grave (No. 68) lay above the entrance and part of the vault of this. As the floor of the chamber was only 2·55 metres below the surface, it is fairly evident that the shaft-grave was of later construction, and must in fact have pierced its vault. The *dromos* was about a metre wide and was traced east for a distance of 5·75 metres from the entrance of the tomb. The walling of the door, 70 centimetres wide, was found in a ruinous condition. The chamber itself was roughly square, 2·43 metres north to south, 2·20 metres east to west, and contained decayed traces of a skeleton with its head south. About the middle of the body were four bronze rings, remains of a bone comb, some beads, and fragment of a two-handled bowl.

No. 70. *Pit-Cave*, lying north to south, with exceptionally small sepulchral cell, closed by a single large stone. This may have been a child's grave, but no bones were preserved. Three vases were found within.

70a. Two-handled clay jug, with traces of painted decoration round shoulder. Height 14·5 centimetres (broken).

70b. Clay jug of similar form but plain. Height 12·8 centimetres. (Fig. 118, 70b.)

70c. Spouted vessel with handle above, showing painted decoration (scale pattern) round the shoulder. Height 14·4 centimetres. (Fig. 117, 70c.)

No. 71. *Pit-Cave*, lying north to south. The pit was 1·81 metres long by 90 centimetres wide, and went down 1·40 metres. The walling of the small sepulchral cavity, 1·24 metres by 60 centimetres, was intact, but within there were only traces of decayed bones and a plain jug about the middle of the grave.

71a. Plain one-handled clay jug, 28 centimetres high, with slight ring round neck. It exactly resembles fig. 118, 1a.

No. 72. *Chamber-Tomb*, entrance to east. The doors had been broken in, but

within the chamber the lower parts of two *larnakes*, A and B., remained in position. (See plan, fig. 84.) Both contained decayed bones, the skull in each case being

at the west end of the sarco-phagus. In A was a bronze finger-ring (*a*) and two decayed paste beads (*b*). Between the two chests was found a bronze needle (*c*), and by the south wall a steatite cup of the calyx shape (*d*), similar to Plate XC. fig. 100 (*e*).

Nos. 73, 74. *Disturbed Shaft-Graves*. No relics.

No. 75. *Shaft-Grave*. The covering slabs were very near the surface, which must here have been denuded. The floor of the grave lay 1.50 metres beneath the slabs. The bones were much decayed, but the place of the head (to the south) was marked by a gold necklace, and that of the right hand by a small gold ring, while by the right side lay a spear-head, knife, and razor.

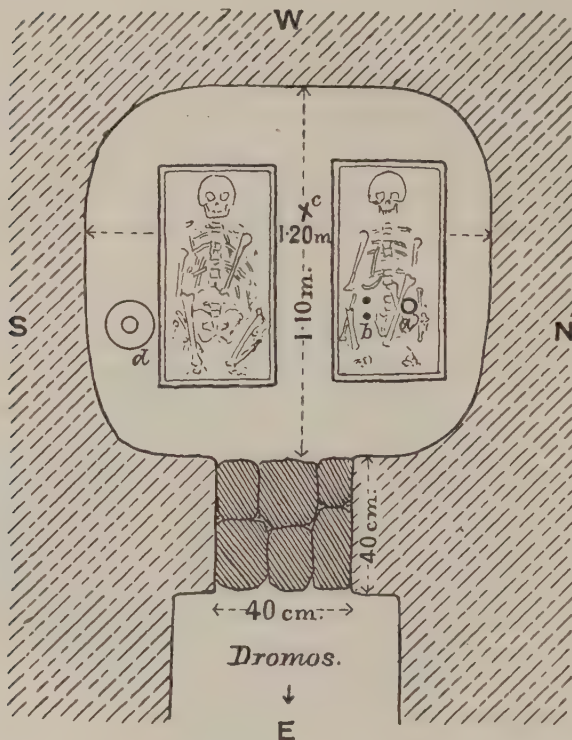


Fig. 84. Plan of Chamber-Tomb (No. 72).

75a. Necklace of 18 gold beads, perhaps representing shells. (Fig. 85 and fig. 119, 75a.)



Fig. 85. Gold beads of necklace from Shaft-Grave (No. 75). (3.)

Gold beads of similar type have been found in a grave of the contemporary cemetery at Phaestos,^a and at Mycenae and Argos.^b A mould for similar beads was found by Schliemann.^c

75b. Small gold ring, plain.

^a Savignoni, *Necropoli di Phaestos*, 100-102.

^b Vollgraff, *Ball. de Corr. hell.* 1904, p. 383 seqq, fig. 15.

^c *Mycenae*, 107, fig. 162.

75c. Bronze razor of the usual type.

75d. Bronze knife of exceptional length; 27 centimetres. It has three rivets to the handle. (Fig. 113, 75d.)

75e. Bronze spear-head (length 26·5 centimetres, greatest breadth of blade 3·4 centimetres). The plate of the socket is folded over and is secured by a collar. The type is unusual, the edge of the blade descending almost to the opening of the socket. The stem of the blade, corresponding to the continuation of the socket within, is ribbed. (Fig. 75e.)

No. 76. *Pit-Cave*. In digging the pit for this grave a larger and a smaller block of gypsum, such as occur sporadically in the rock, had been encountered and

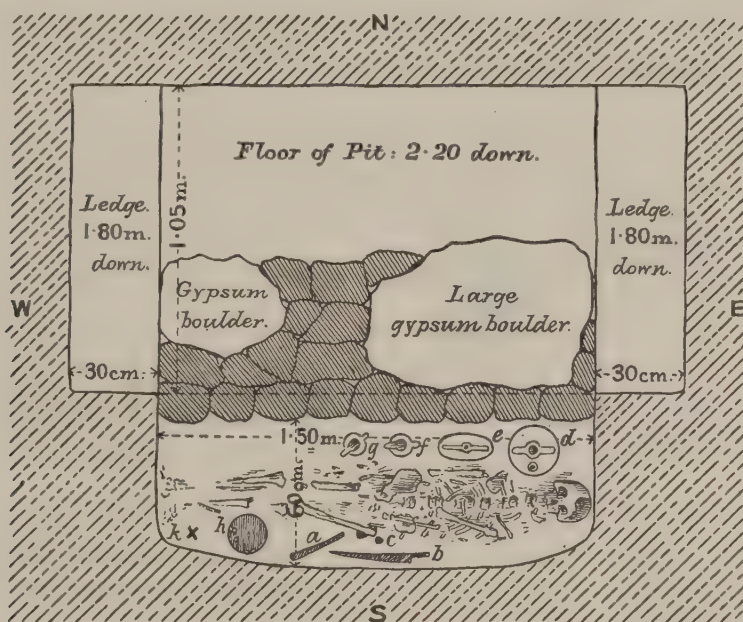


Fig. 86. Plan of Pit-Cave (No. 76).

were made use of for the foundations of the wall of the cave. The walling for this reason was exceptionally thick, in one place nearly a metre, and projected below into the middle of the pit. The pit lay east to west with the opening of the sepulchral cavity to the south of it. The vault of this had collapsed, but the interment was otherwise intact. The skeleton lay with the head to the east. A group of vases had been placed on the right side, on the left were a bronze chisel and knife, two whorls near the left hand, and a mirror and bronze pin near the feet. (See plan, fig. 86.)

76a. Bronze chisel (length, 7.4 centimetres); the upper part square in section, very slightly widening to an edge.

76b. Bronze knife; the point slightly broken; original length about 21 centimetres.

76c. Two whorls, one of bone the other of paste.

76d. Painted stirrup-vase, height 26 centimetres. (Fig. 114, 76d.) It has a diamond pattern round the sides and a wave-and-dot border round the base. The top of the false opening is decorated with a trefoil design.

76e. Two-handled painted flask. (Fig. 117, 76e.) Round the neck is a slight raised ring. The faces of the flask show concentric circles, and on either side is a vertical line of triangles, the base of one resting on the apex of another. These clay flasks are rare in Crete, but are of frequent occurrence in Cypro-Mycenæan interments, e.g. Enkomi, Tomb 45; Kurion, etc.^a Faience flasks of similar shape were made in Egypt (an example was found in the Enkomi tomb referred to above).

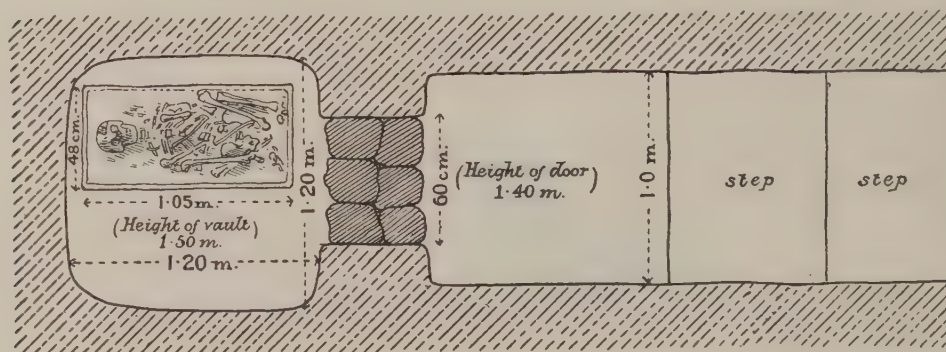


Fig. 87. Plan of Chamber-Tomb (No. 80).

The decoration of concentric circles recurs on the Cypriote specimens, and as the superposed triangles are also a Cypriote detail, it seems probable that the present flask was imported from Cyprus.

76f. Small painted one-handled jug with projecting spout (height 6 centimetres). Round the shoulders is a band of curving lines derived from foliage. (Fig. 117, 76f.)

76g. Small painted jug with a single handle and slightly raised spout (height, 6.5 centimetres). Round its shoulders runs a band of chevrons. (Fig. 117, 76g.)

76h. Bronze mirror, diameter 13 centimetres.

No. 77. *Disturbed Pit-Cave*, lying north to south.

No. 78. *Shaft-Grave*, lying north to south. The total depth from the surface was 2 metres, the floor of the grave itself lying 1 metre beneath the

^a Myres, *Catalogue of the Cyprus Museum*, 970.

covering slabs. The shaft was 2·40 metres by 1·30 metre, the sepulchral cell 1·90 metre by 75 centimetres. The head seems to have been at the south end. Near the middle of the grave on the west side was a fragmentary bronze razor.

No. 79. *Shaft-Grave*, lying north to south. It contained only traces of bones of a person of small stature, probably a child; the head north. By the upper part of the body was found a lozenge-shaped cornelian bead.

No. 80. *Chamber-Tomb*. The entrance on the east. It was approached by a short *dromos* with three steps. The walling of the doorway was found intact, and the small chamber within contained a single *larnax* on its north side. (See plan, fig. 87.)

The *larnax* (see fig. 4e above) had an incised Λ at the east end of the lid, repeated in the lower part immediately below. It was absolutely intact, and when opened showed a skeleton in a crouched position with the knees drawn up; the left hand resting on the thigh. At the feet were two knives with their original handles and a pointed instrument. The inner dimensions of the clay receptacle were 96 centimetres in length, 35 centimetres in breadth, and 45 centimetres in depth. The height of the *larnax* with the cover on was 87 centimetres. Fig. 4 above gives an inner view of the sarcophagus from a photograph taken immediately after its extraction from the tomb. Fig. 88, from

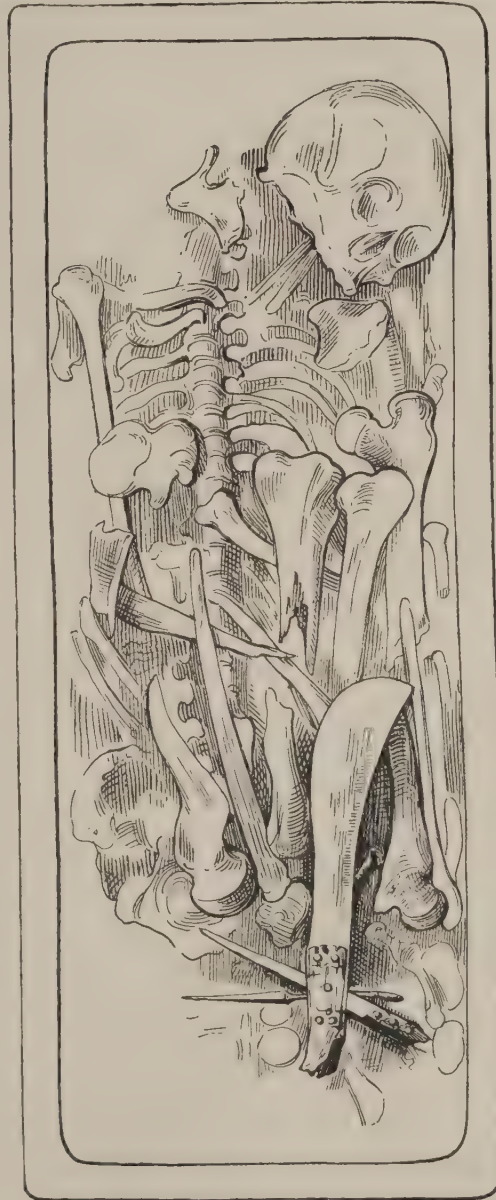


Fig. 88. View of interior of *larnax* from Tomb No. 87, with skeleton in contracted position.

a sketch taken by Mr. Halvor Bagge when the *larnax* was still *in situ*, gives some of the details more clearly.

80a. Bronze knife with broad curving blade attached by seven rivets to its original wooden handle. The handle, which seems to be of wild olive wood, is 10 centimetres long, and is wonderfully well preserved. The length of the blade is 32 centimetres.

80b. Bronze knife of the usual type with remains of its wooden handle. The length of the whole is 20·4 centimetres.

80c. Pointed instrument with stem presenting a square section, length 21 centimetres. It has the appearance of a javelin head, but seems to be too slender for such an use.

No. 81. *Chamber-Tomb*. The entrance (70 centimetres wide, 1·30 metres high), with its wall untouched, lay to the east. It was approached by a *dromos* 1 metre wide, descending 2·70 metres beneath the surface. The chamber itself contained three plain *larnakes* lying east and west, each of which contained remains of a skeleton with its head at the west end. No relics were found, beyond a small knife, beads, and whorls in the north *larnax* about the middle. The chamber, nearly square in plan, was 1·60 metres north to south, 1·40 east to west, and 1·30 in height.

81a. Bronze knife of usual type, 15 centimetres long.

81b. Paste bead.

81c. Amethyst bead-seal of circular form, like a lentoid with flattened edges. It bears a very simple engraving consisting of a cross with hatchings between the limbs.

81d. Alabaster whorl.

81e. Steatite whorl.

No. 82. *Small Chamber-Tomb*, the *dromos* of which (to the east) was little more than a stepped pit, 1·70 metres long. It had been plundered, and fragments of a stirrup-vase was found outside the entrance. The chamber itself was very small, a mere recess, 60 centimetres wide and 40 centimetres deep. Two small crystal beads and one of paste were found within. The sides of the low doorway were much battered.

Nos. 83, 84.—We have here an example of a double tomb. (See plan, fig. 89.) A stepped pit led directly to an arched recess containing remains of a *larnax*, while to the left of this cavity a short *dromos* led to a chamber with the entrance walling preserved, containing three *larnakes*. One of these (c) had evidently been superposed on the two others, but had been much ruined by the collapse of the roof. The remains of a bone comb probably belonged to this or the clay

chests A and B below. Between A and B were found some fragmentary remains of a small stirrup-vase (e). B was much broken up, but the lower part of A was fairly preserved; it presented the interesting peculiarity of containing remains of two skeletons with their heads at opposite ends of the recipient. About

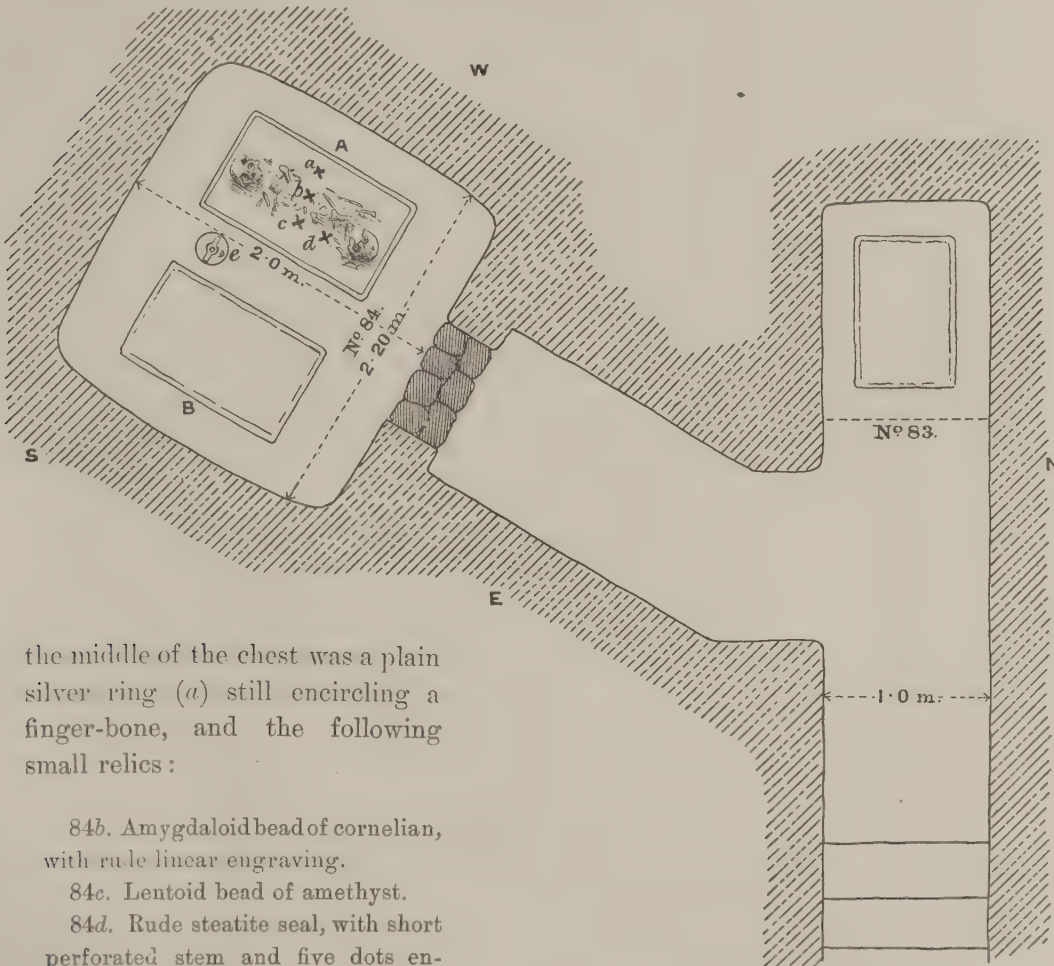


Fig. 89. Plan of double tomb (Nos. 83, 84).

the middle of the chest was a plain silver ring (a) still encircling a finger-bone, and the following small relics :

- 84b. Amygdaloid bead of cornelian, with rule linear engraving.
- 84c. Lentoid bead of amethyst.
- 84d. Rude steatite seal, with short perforated stem and five dots engraved on its face.

No. 85. *Chamber-Tomb*. Entrance to east. Plundered, no relics found.

No. 86. *Chamber-Tomb*. Plundered and much ruined, the bones in disorder, no measurements possible. To the northern half lay a bronze dagger with its point east. Three whorls were also found.

86a. Bronze dagger, 23 centimetres long. The blade is grooved and the handle has curving flanges and a rivet at base. (Fig. 90.)

No. 87. *Shaft-Grave*, lying north to south. Remains of a skeleton were found with the head north, but no relics.

No. 88. *Shaft-Grave*, lying east to west. No remains.



Fig. 90. Bronze dagger from Chamber-Tomb (No. 86).

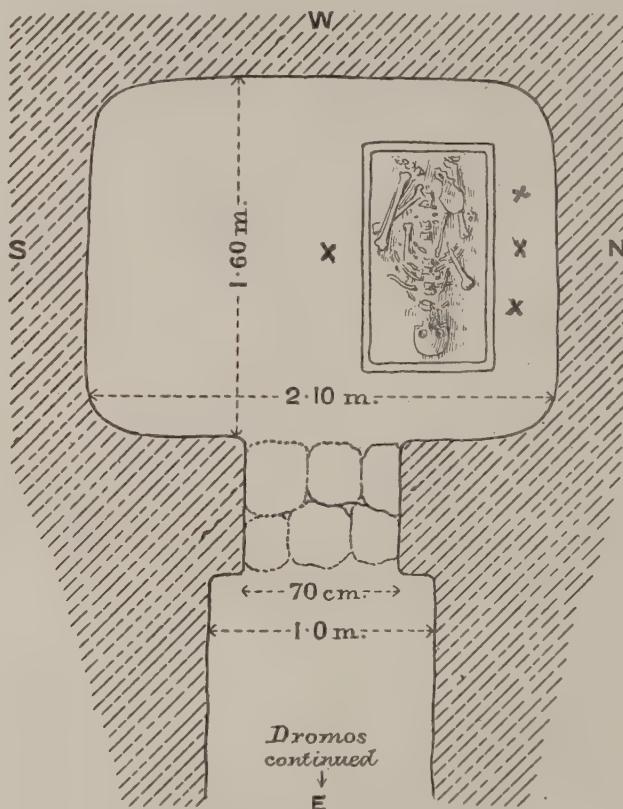


Fig. 91. Plan of Chamber-Tomb (No. 93).

No. 89. *Chamber-Tomb*, with entrance on the east. The dimensions of the chamber were small, east to west 1.28 metres, north to south 1.10 metres. On the south side lay a skeleton with the head west, and near it a small bronze knife of the usual form. The door of the chamber, 60 centimetres wide, 70 centimetres

high, had been broken in and the tomb plundered. The *dromos* was 80 centimetres wide, and descended 1.40 metres beneath the surface level.

No. 90. Small *Chamber-Tomb*, with entrance to east. Contained a broken *larnax*, lying north to south, which shows traces of colouring. In the *larnax* were remains of a skeleton with head north, and one whorl.

No. 91. *Shaft-Grave*, lying north to south. Within was a much-decayed skeleton, the head south, and by the neck some small paste beads.

No. 92. *Chamber-Tomb*. Entrance east. The doorway was exceptionally rounded at top. (See fig. 1c). The walling was intact and within were remains of a skeleton with the head west. Near the place of the left hand were a plain gold ring (*c*) and two whorls (*d* and *e*), and by the left shoulder a larger and smaller bronze knife (*a* and *b*) and a plain bowl. The plan and section of the tomb are shown in fig. 1a, b.

No. 93. *Chamber-Tomb*. Entrance east. The door was broken open. (See fig. 3a.) In the north part of the chamber was a plain *larnax* with the lid on, length 1.5 metres, outer width 40 centimetres, height 1 metre. (Fig. 3b.) The bones had been left intact and showed that the body had been buried with the legs doubled up. The skull (much decayed) was at the east end of the chest. No relics were found inside, but, beside the *larnax*, probably thrown out by plunderers, were three steatite whorls and decayed remains of a glass bead (xxx and x on plan, fig. 91).

No. 94. *Chamber-Tomb*. Entrance east. The chamber, about 2.50 metres square, was much ruined, and had evidently been entered from above. Near the south-west corner were some decayed bones, apparently of a child, and in the south-east corner a plain clay bowl with solid projecting handle. The walling of the entrance was intact and the doorway was well cut. (See elevation, fig. 92.)

No. 95. *Chamber-Tomb*. Entrance east. The walling of the doorway (1.30 metres high) was found intact. In the chamber were the much-decayed remains of two skeletons with the heads west. At the feet of either skeleton lay a mirror and near the entrance was a stirrup-vase. (See plan, fig. 93.)

A short sword or dagger apparently belonging to the second interment lay near the centre of the tomb. On the other side of the same skeleton together

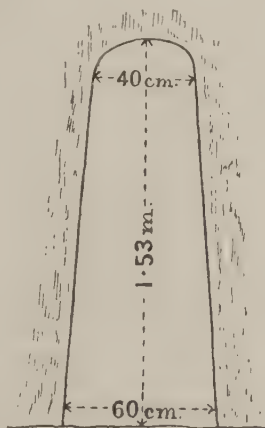


Fig. 92. Doorway of Chamber-Tomb (No. 94)

with other relics was a clay chafing-pan for containing embers. The falling in of the vault of the tomb had much damaged some of the relics.

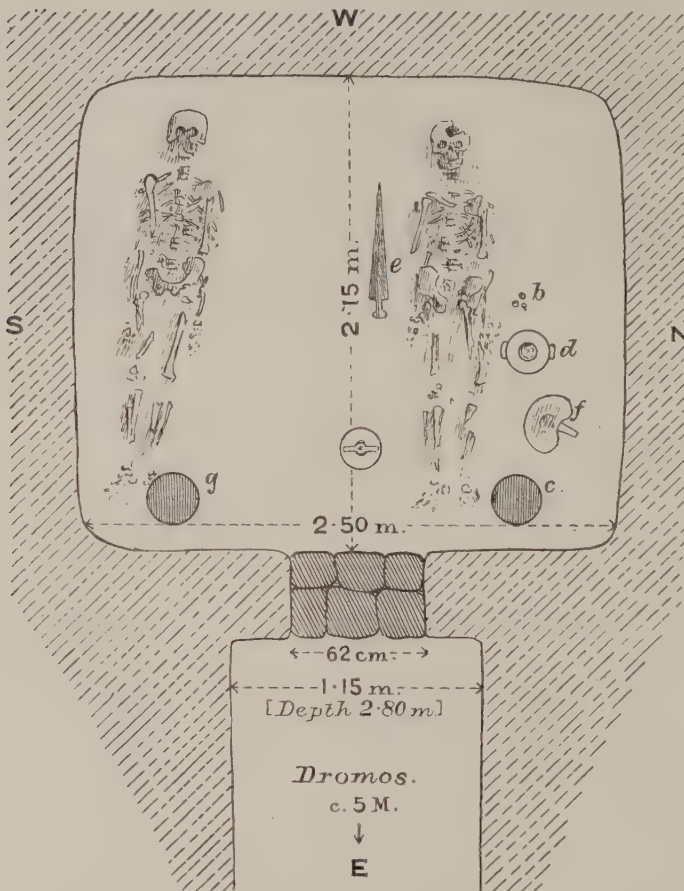


Fig. 93. Plan of Chamber-Tomb (No. 95).

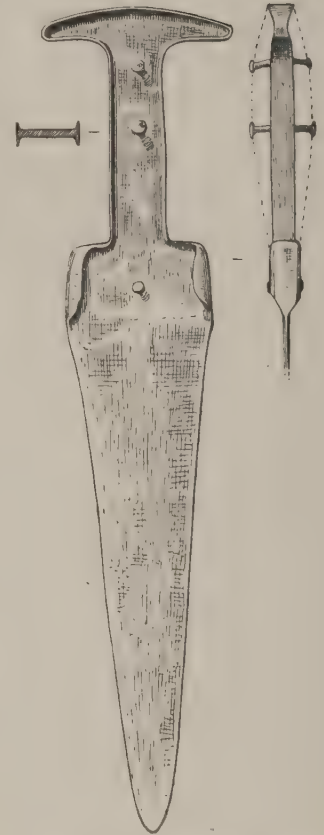


Fig. 94. Bronze short sword from Chamber-Tomb (No. 95).

95a. Small stirrup-vase, 8 centimetres high, with a single foliate band round the shoulder, resembling the double one of 51a. (Fig. 114, 95a.)

95b. Two whorls of black steatite.

95c. Bronze mirror, diameter 13.3 centimetres.

95d. Two-handled clay cup of champagne glass type (height 12 centimetres), with handles set horizontally. (Cf. fig. 114, 7f.)

95e. Bronze dagger or short sword, length 37 centimetres, greatest breadth of blade 6.2 centimetres. (Fig. 94.) The hilt, in which are fixed three rivets, is bordered by a

raised flange. The type is identical with that of a dagger found with a small hoard of other bronze weapons and implements on the Acropolis at Athens.^a

95f. Clay chafing-pan, resembling fig. 32 (broken).

95g. Bronze mirror, diameter 18 centimetres.

No. 96. *Chamber-Tomb*. Entrance to east. This tomb had been broken into and plundered. There were remains of two skeletons with their heads east, and in the north-west corner a small hollow containing two skulls and bones; these also a good deal decayed. Near the north skeleton were two whorls, and by that on the south border of the chamber the following relics:

96a. Plain bracelet of bronze wire, diameter 7·8 centimetres.

96b. Fragmentary remains of small spouted clay vase.

96c. Plain clay bowl with two handles rising from rim, diameter 15·5 centimetres. (Fig. 114, 96c.)

No. 97. *Chamber-Tomb*. Entrance east. Approached by a *dromos* 1 metre wide and 3·50 metres long. The door, 60 centimetres wide and 1·10 centimetres high, had been broken in, and the roof of the chamber, which was 1·84 metres square, has collapsed. Remains of a skeleton were found with the head west, and near the north wall were found two crystal pendants, a bead, and a steatite figure apparently used as an amulet.

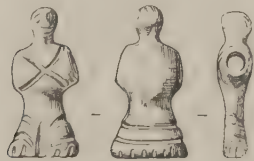


Fig. 95. Steatite pendant in form of a female figure, from Chamber-Tomb (No. 97). (½.)

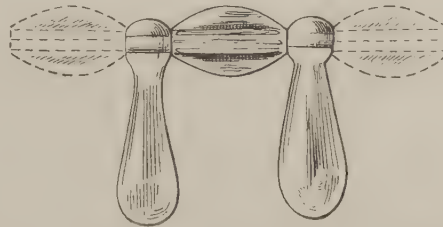


Fig. 96. Drop-shaped pendants and bead of crystal, from Chamber-Tomb (No. 97). (½.)

97a. Female figure of black steatite perforated through the shoulders for suspension. It has the usual Late Minoan (Mycenæan) flounces, and cross grooves on the upper part of the body. (Fig. 95.) This figure seems to be of the nature of an amulet, and may be taken to represent the great Goddess of Minoan Crete, later known as Rhea. Other small steatite figures of the same kind, perforated for suspension, have been found in Crete.^b Another similar amulet of dark steatite, now in the Ashmolean Museum, is said to have been found in the Lebanon.

^a Montelius, *Ett fynd från Athens akropolis*, 4, fig. 3

^b One is in the Ashmolean Museum.

97b. Two drop-shaped pendants of rock crystal. (Fig. 96.)

97c. Crystal bead (fig. 96) apparently belonging to the same necklace as the crystal pendants.

No. 98. *Chamber-Tomb*. Entrance east. The upper part of the door had been broken in. The chamber presented the peculiarity of having a raised ledge

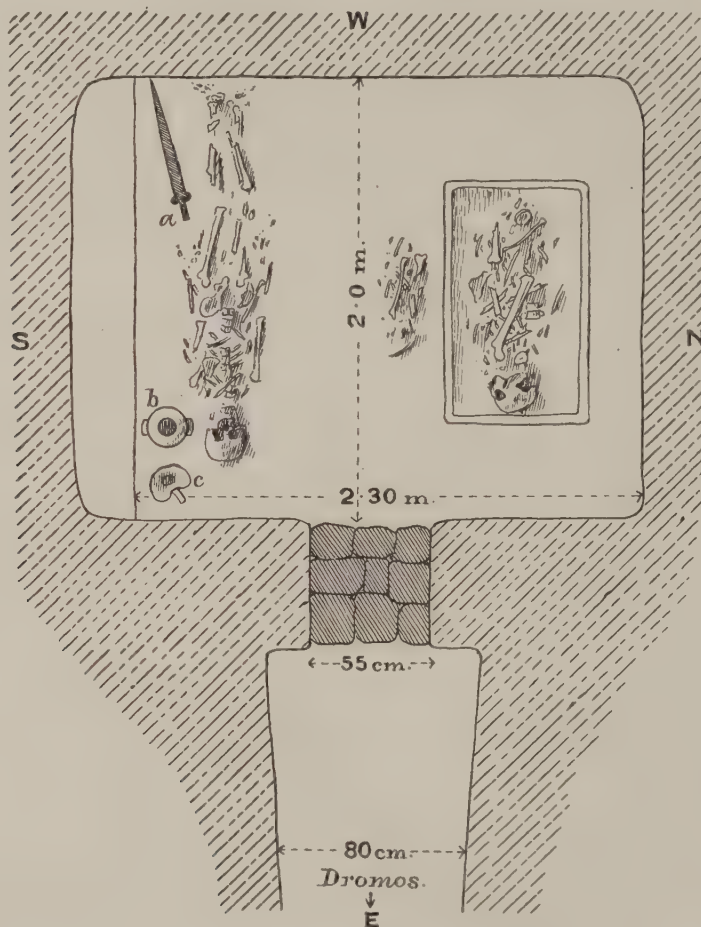


Fig. 97. Plan of Chamber-Tomb (No. 98).

along its south wall, about 45 centimetres above the original floor of the tomb. It contained two interments, one belonging to a time when the floor had been slightly raised (about 15 centimetres). This latter was represented by a *larnax*

which showed faint traces of colours. The lower part of this was intact, but the lid had been broken and part of the bones that the clay chest originally contained lay on the floor beside it. Remains of the skull were found at the east end of the *larnax*, but there were no associated relics either inside or outside of it. It is evident that the later deposit had been plundered, but the accumulation of soil had apparently concealed the earlier interment which lay along the south side of the tomb. This consisted of a skeleton with the head east. By the head was a charcoal holder and stone vase, and at the feet, partly resting against the corner of the tomb, so that its point was turned upwards, a bronze sword. By this was also a bronze razor. (See plan, fig. 97.)

98a. Bronze sword, length 61 centimetres. (Plate XCI. fig. 109, 97a). The midrib of the blade is flattish and slightly rounded. The hilt showed some of the wooden handle adhering and has two rivets. In its general type the sword answers to 42a, 43a, 55a, and 36i, but there seems to have been no tang at the extremity of the hilt.

98b. Stone vase showing a terra-cotta ground mottled with grey. Height 10.5 centimetres, diameter 16 centimetres. It has ledge handles and the body is somewhat globular.

98c. Clay chafing-pan or charcoal holder found broken, but with remains of charcoal in the lower part of the holder. It has a solid projecting handle. Height 13.3 centimetres, width of rim 22 centimetres. (Fig. 114, 98c). It much resembles the charcoal holder of Grave 32.



Fig. 98. Bronze razor from Chamber-Tomb (No. 98).

98d. Bronze razor. (Fig. 98.)

No. 99. *Chamber-Tomb*. Entrance east. The vault of the chamber had collapsed but the walling of the doorway was intact. The ground plan of the chamber itself (fig. 99) formed an almost perfect square, 2.20 metres in each direction. In the south section of this were remains of two skeletons with their heads west, one of a child, several very small clay vases lying between the two heads. By the left hand of the adult skeleton was a spiral gold ring (c), and to the right of its head a blossom vase of steatite (e). The north section of the tomb contains another adult skeleton, also with the head west, and accompanied by a richer *peculium* than the other. On the breast were remains of a necklace consisting of a scarab, engraved gems, and various beads; by the left hand two gold rings like the others; a very elegant stone vase lay near the head, and towards the feet a bowl, goblet, and mirror of bronze. The bones were much decayed, but from the

fact that the gold rings of the more important burial were of greater diameter than the other, it looks as if in the one case we had to deal with a man and in the other with a woman.

A group of objects from this tomb is shown in fig. 100, Plate XC. The

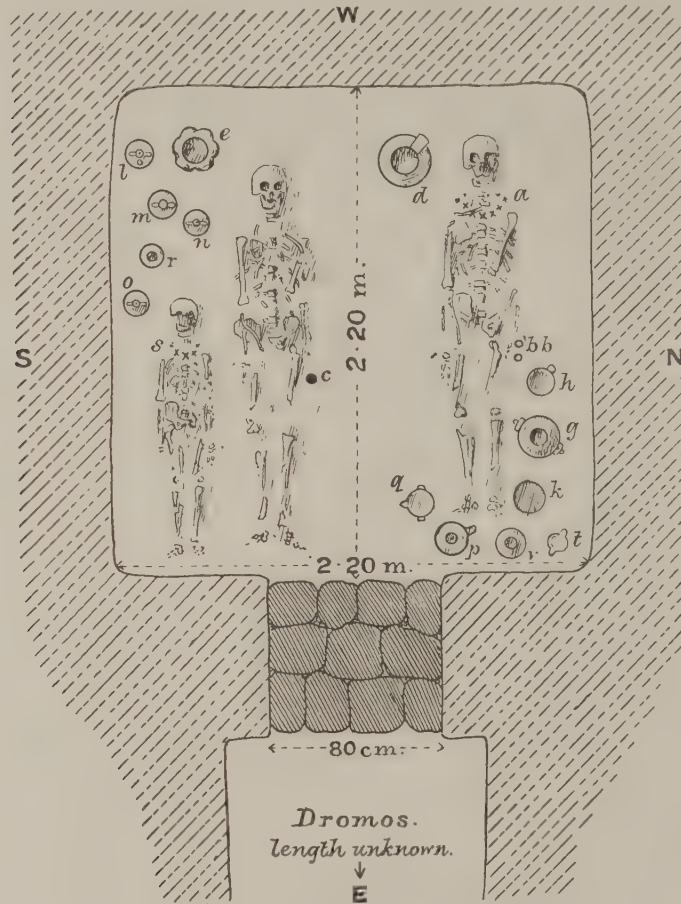


Fig. 99. Plan of Chamber-Tomb (No. 99).

absence of arms or implements is noteworthy. Assuming that the burial on the north side was that of a man and those opposite his wife or child, we may perhaps infer that the latter were buried later, and that the arms which must surely have been originally placed with the rich interment were on that occasion abstracted. The theft was perhaps masked by the placing on that side of some

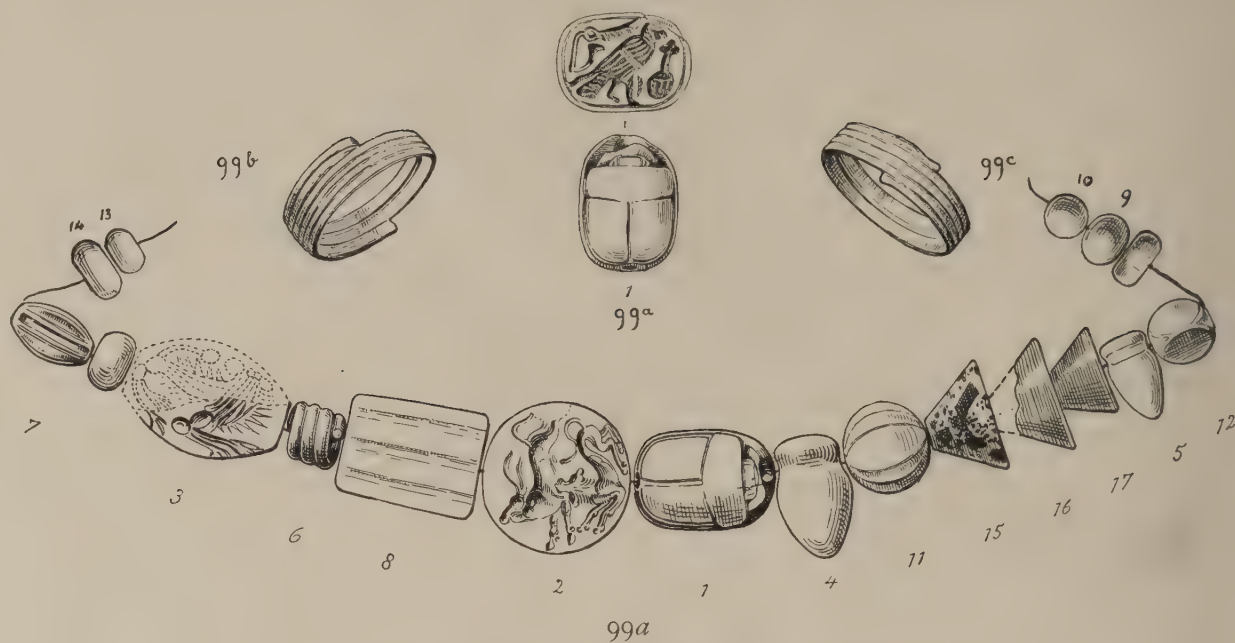


Fig. 101. Objects belonging to a necklace and gold rings from Chamber-Tomb (No. 99).



Fig. 100. Group of objects from Chamber-Tomb (No. 99).

of the miniature vessels more naturally intended for the child. It is probable that many such abstractions had taken place in this cemetery.

99*a*. Objects belonging to a necklace. (Fig. 101, Plate XC.)

1. Egyptian scarab of white steatite. The sacred hawk, *nefer*, and winged *uræus* signs on this scarab seem to have an amuletic intention. The character of this group of signs, and the one-winged *uræus*, answer to scarab types in vogue about the close of the Eighteenth Dynasty. A close parallel is afforded by a scarab from Tell-el-Amarna. (Petrie, pl. xv. 145.)
2. Lentoid cornelian bead seal, engraved with design of a lion seizing a bull.
3. Part of an amygdaloid cornelian bead seal, showing the lower part of what appears to have been a roughly executed design of a lion.
- 4, 5. Two crystal pendants of a type perhaps derived from arrow-heads. Miniature arrow-heads of red cornelian, perforated in a similar manner, are still worn as charms by the Arabs and Turks.
6. Bronze spiral bead.
7. Bead of gold plate.
8. Tabloid bead of ivory, the surface much corroded.
9. Crystal bead forming flattened sphere.
10. Globular bead of crystal.
11. Crystal bead which in section is of trefoil outline.
12. Three-sided bead of crystal.
- 13, 14. Cornelian beads.
15. Whorl of white stone variegated with black.
- 16, 17. Brown steatite whorl.

99*b*. Gold finger ring of spiral wire. Inner diameter 2 centimetres.

99*c*. Gold finger ring as 99*b*, but smaller. Inner diameter 1·8 centimetre.

99*d*. Grey stone bason with round handles, evidently in imitation of a metal prototype like the bronze bason 14*b*. Diameter 19 centimetres, height of bowl 7·4 centimetres, of handle 9·8 centimetres. (For this and the following see fig. 100, Plate XC.)

99*e*. Blossom vase of steatite. Vases of this type were also found in Tomb No. 72. Diameter 21 centimetres, height 13 centimetres.

99*g*. Two-handled bronze bowl, with horizontal handles provided with knobbed vertical offshoots. A good deal broken. The type of vessel closely approaches 14*c*.

99*h*. Globular bronze vase of bronze with a single handle attached by two rivets above to the rim and below to the body. Height 9·5 centimetres, diameter 11 centimetres. A similar vessel was found in a tomb at Phaestos. Savignoni^a compares it with an Egyptian

^a *Necropoli di Phaestos*, 47, fig. 26.

bronze vessel,^a but the upper part of the handle of the latter with its engraved lotus has a different shape. The ring at the junction of the collar and body of these Cretan bronze vessels is also a non-Egyptian feature.

99*k*. Bronze mirror, 12·7 centimetres in diameter.

99*l*. Small plain stirrup-vase (height 6·3 centimetres), covered with a kind of black varnish. Cf. above, the vases in Graves 66, 67.

99*m*. Similar stirrup-vase, with varnish. Height 6 centimetres.

99*n*. Small painted stirrup-vase, with conventionalised sprays. Height 6 centimetres.

99*o*. Small painted stirrup-vase, height 6·2 centimetres, with conventionalised sprays.

99*p*. Painted one-handled cup, with brown bands on a buff ground. Diameter 11 centimetres.

99*q*. Plain red-faced vessel, with spout and two upright horizontal handles. Height 5·4 centimetres, diameter of rim 9·5 centimetres.

99*r*. Plain clay pot, height 5·8 centimetres, with knobs in place of handles.

99*s*. Small paste beads.

99*t*. Miniature vessel of plain clay with handle and raised spout. Height 2·7 centimetres.

99*u*. Small plain stirrup-vase. Height 6·5 centimetres.

99*v*. Low painted jar with three upright horizontal handles. A lid found near apparently belongs to it. It has a band with a pattern resembling the architectural egg ornament. Height 7·8 centimetres.

No. 100. *Chamber-Tomb*.—Entrance to east. Most of the vault and the upper part of the doorway had fallen in. The chamber, which was exceptionally wide in proportion to its depth, contained remains of three *larnakes* (*a*, *b*, and *c* in plan, fig. 103). The upper parts of these were much broken, especially in the case of *b* and *c*, though decayed remains of skeletons were found in all, the heads in *b* and *c* being west, in *a* east. The lid of *a* was wanting, but the receptacle was well preserved and proved to be painted with various decorative motives. (See figs. 102*a* and *b*.) One of the two faces shows a design of linked spirals enclosing small flowers of from three to six petals. This linked spiraliform pattern is akin to similar designs on painted funereal chests and the walls of tombs of Eighteenth and Nineteenth Dynasty date. The work was executed with a free hand without any aid from a template or skeleton squares, and considering the elaborate character of the pattern displays considerable skill. The other face shows a decorative class of papyrus sprays, and another of these appears at one of the small ends of the chest. The other end is decorated with a kind of scale pattern.

^a Maspero, *Manual of Egyptian Archaeology*, 306, figs. 276, 277.



Fig. 102a. Painted *larnax* (a) from Chamber-Tomb (No. 100),



Fig. 102b. Painted *larnax* (a) from Chamber-Tomb (No. 100).

This *larnax* contained, besides the bones, a bronze ring and bracelet and three paste beads, and a steatite whorl and clay cup were found on the floor of the chamber. The tomb contained no other relics.

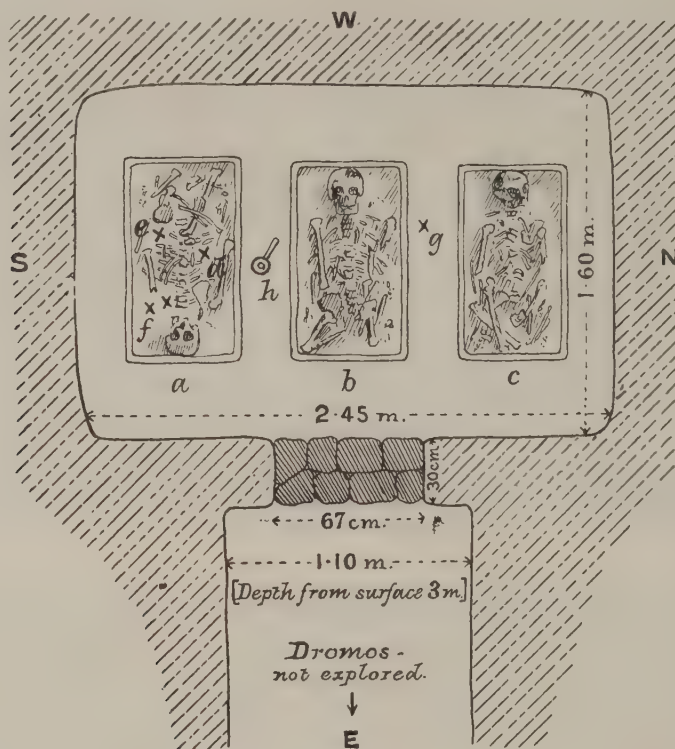


Fig. 103. Plan of Chamber-Tomb (No. 100).

100d. Bronze ring, plain hoop.

100e. Bronze bracelet, plain hoop.

100f. Beads: (1) amethyst, globular; (2) cornelian, flattened sphere; (3) paste, globular.

100g. Steatite whorl.

100h. Plain clay cup or ladle with raised loop handle. Height with handle 8 centimetres.

§ 3. *Comparative Note on a Chamber-Tomb at Milatos.*

Interesting comparisons with the chamber-tombs of Zafer Papoura are supplied by that of Milatos, already referred to as having been explored by me in 1899. The objects found in this tomb show that it belongs to a somewhat later date than the latest interments of the Knossian Cemetery, and as neither the tomb itself nor its contents, with the exception of a painted ossuary, have as yet been published, a summary account of this discovery will be found useful in the present connexion.

The modern village of Milatos lies on the north coast of Crete, about 25 miles east of Candia and of the site of Knossos. It derives special interest from the fact that it still preserves, under its Doric form, the name of the Cretan Miletos, the mother city of the more famous civic foundation on what was later the Ionian Coast.^a That it had itself some importance at a very early date may also be gathered from its mention in the Homeric Catalogue.^b

A little south-west of the village rises what was probably the Acropolis hill of ancient Milatos, still crowned by the remains of a Venetian stronghold known as Kasteli. An earlier discovery of a chamber-tomb had been made on the east side of this hill, containing the painted clay sarcophagus in the form of a bath described by Orsi in 1890.^c The western face of the hill-top where the present find was made was formed by a low cliff running above the upper margin of a vine-clad terrace, and it was while working here in his vineyard that the peasant owner broke a small hole into the side of a vault. Finding that it was a tomb, the proprietor of the vineyard obligingly sent word to me of the discovery, and meanwhile closed the opening.

On my arrival this aperture was reopened, and I descended into the sepulchral chamber, the interior of which showed an absolutely intact arrangement. The infiltrations of the soil had been slight, and only covered the lower parts of some of the vases, which stood in groups on the floor, while the two clay chests containing the bones stood against the walls regularly disposed in their original positions like parts of the furniture of a room.

^a Strabo xii. 8 (5), and xiv. 1 (6), who cites Ephorus. Sarpedon was said to have led the Cretan colonists.

^b *Iliad*, ii. 647.

^c *Urne funebri Cretesi* (*Mon. Ant.* 1890), 10, 11, and Tav. ii. 1 and 2.

The vault itself was entered on the west by a doorway about 0.75 metre wide and 1.20 metre high, blocked by a dry walling and leading to a short *dromos*. This entrance, however, did not open into the middle of the chamber, a circumstance explained by a fact, which a further examination of the interior made evident,

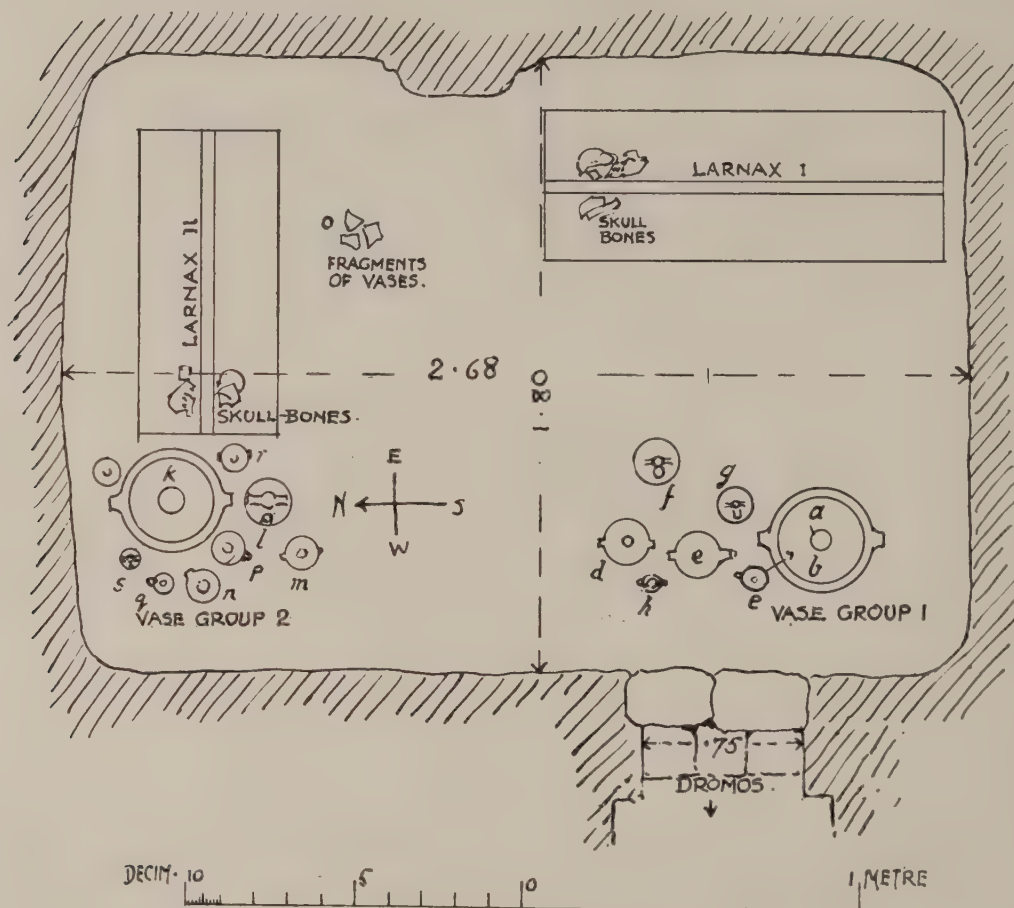


Fig. 104a Plan of Chamber-Tomb at Milatos.

that the original tomb had been enlarged by a subsequent extension to the left of the entrance. This is clearly shown by the annexed ground plan. (Fig. 104a.)

The ossuary chests stood one in each half of the chamber, the length and breadth of which was about 2.68 metres by 1.80 metre, while its height was about 1.40 metre, the roof being nearly flat. (See section, fig. 104b.)

The vases were disposed in two principal groups (1 and 2). Group 1 (fig. 105) lay in what has been described as the original part of the vault, immediately in front of the doorway, and was arranged in front of the painted chest which occupied the inner side of the rock-wall. Besides the perfect vases there were here some fragments, probably due to the disturbance caused by the subsequent enlargement of the chamber. Group 2 (fig. 106) lay in what may be called the annexe, near the western end of the second chest. Further back in this

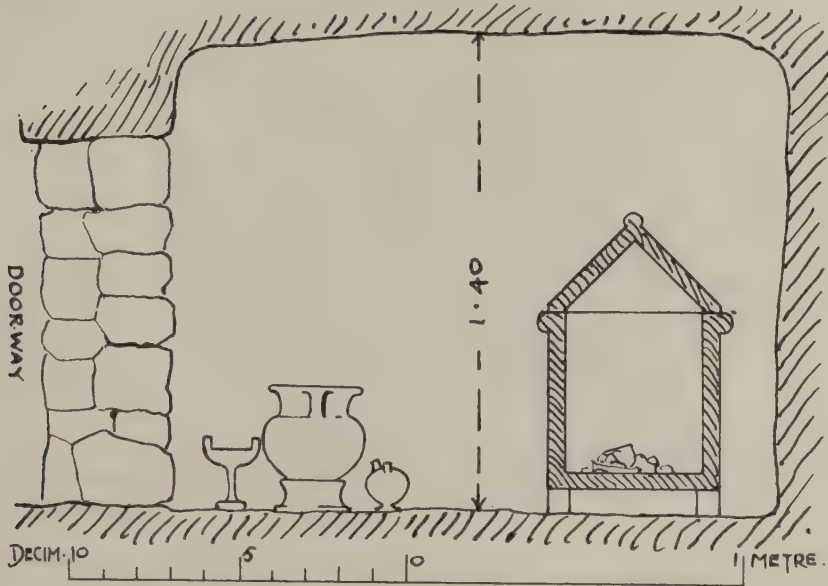


Fig. 104b. Section of Chamber-Tomb at Milatos.

chamber, along the outer side of the chest, were some other fragments of vases, the presence of which seemed to connect itself with an earlier interment which had taken place at this spot; for, partly beneath these fragments, partly under the feet of the Chest No. II. itself, were remains of a third clay ossuary or *larnax* that had at some time or other been destroyed, and one side of which helped to serve as a kind of base for the chest that had here replaced it. On the floor, near the middle of the chamber, was found a broken bead of blue glass with a double perforation, and exhibiting a rosette ornament in relief.

Vase-Group 1 (fig. 105):

- A. Large two-handled amphora, height 41.5 centimetres, diameter 40 centimetres,

standing on open-work base (B) and containing the small cup (C). The amphora bears a conventionalised octopus design, dark brown on warm buff, with supplementary coils. A somewhat smaller vase of the same form and decoration has been found at Tsarkon, in the Cretan district of Malevisi.

The practice of setting large vases in tombs on open-work bases is illustrated from the contents of a *tholos* tomb at Ligortino.



Fig. 105. Group 1 of vases found in a Chamber-Tomb at Milatos.

D. Two-handled pedestalled cup of champagne-glass type, with dark brown and red decoration on pale buff ground. The lyre-like motive in the decoration recurs on the base (B). Height to rim 16·5 centimetres, diameter of bowl 17·3 centimetres.

E. Elegant spouted bowl, with orange red decoration on buff ground. Height 8 centimetres, width of bowl 17 centimetres.

F. Stirrup-vase (*Bügelkanne*) with geometrical design of brilliant red and brown on pale buff and fine glaze.

g. Stirrup-vase, somewhat smaller, height about 10·5 centimetres, with similar bright colouring and glaze.

h. Small high-beaked vase with bright reddish brown decoration on a warm buff ground. Height 5 centimetres.

Vase-Group 2 (fig. 106) :

j. Large two-handled amphora, like a, height 47 centimetres, diameter 38 centimetres, with dark brown decoration on pale buff, the principal motive being a late and



Fig. 106. Group 2 of vases found in a Chamber-Tomb at Milatos.

conventionalised derivative of the triton shell design on vases belonging to the Palace Style of Knossos.

k. Small high-spouted vase, height 6 centimetres, diameter 4 centimetres. Wreath ornament, dark brown on warm buff.

l. Stirrup-vase of somewhat coarse fabric, surface a good deal decayed, height 30 centimetres, diameter 20 centimetres. Dark brown decoration on buff.

m. Two-handled pedestalled cup like n, base wanting. Dotted disc ornament, pale red on buff ground. These are perhaps reminiscences of the rosettes on metal vases of

in the other chest, the remains of the skull bones towards the northern end. They seem to be those of a man.

The red clay of this chest is coated with a pale buff wash upon which the decorations are painted in a bright reddish brown. Upon one of the sides is an irregular design of loops and curves with cross strokes, perhaps of vegetable derivation, in the middle of which is a large fish with a very small one by its side. Beneath the fish are waving lines presumably indicative of water. The other side and one end present variant decorative designs of the same character, but without the fish.

The representation at the north end of the *larnax*, though like the rest of the decoration of rude execution, is of the greatest interest. The upper part of the field is occupied by an apparently nude male figure, with his right arm raised open-palmed and holding out with his left what appears to be a large body shield^a by its upper margin. The figure is turning to the right according to the usual Minoan and, it may be added, Egyptian perspective, with his head, the profile of which is very rude, and feet pointing in the side direction, but his body full-facing.

A remarkable feature of the design is the appearance on either side of the head, and as if proceeding from the neck, of a pair of sinuous projections. Those to the left have a good deal suffered from the effects of the removal of the chest to Candia, its surface being inclined to peel off. They are, however, seen in fig.

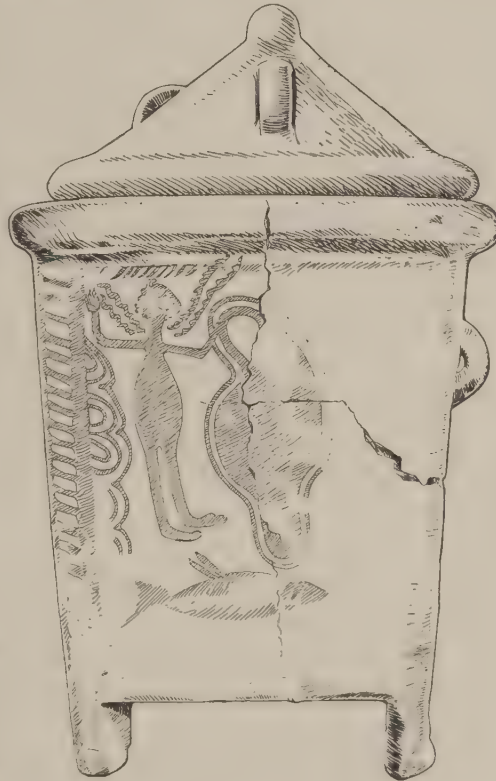


Fig. 107. End of painted *larnax* (No. I.), from a Chamber-Tomb at Milatos.

107, which is based on a photograph taken by me at the moment of excavation in

^a In the illustration of this design given in my *Mycenæan Tree and Pillar Cult*, 74, fig. 50, the edge of the shield is represented with a double curve as in the case of the ordinary Mycenæan shield. Further examination of the traces of painting on the *larnax* has, however, made it clear that there exists a third curve below. The design is here reproduced (fig. 107) from a corrected drawing by Mr. C. Prætorius.

their pristine condition. Beneath the figure and separated from it by a small interval is a fish of the same character as that seen on the side of the *larnax*.

The shield-bearing figure itself stands on nothing and seems to be in the air. In my monograph on *Mycenæan Tree and Pillar Cult*, I had ventured to recognise in it a figure of a divinity. The curious upward curving lines on either side of the neck were there compared with the rays which are seen rising from the shoulders of the Babylonian Sun-God Samas.^a A Minoan parallel was further sought by me in the subject of a gold ring found on the site of Knossos in which a male figure, evidently a god, holding out a spear, and with dotted projections on either side of his neck, is seen descending before his sacred obelisk.

In view of the more recent discovery of certain wall-paintings from the Palace of Knossos, in which the idea of rapid motion is accentuated by centrifugally flying locks of hair,^b the possibility now suggests itself that in the case of the *larnax*, at any rate, we may have to do with locks of hair rather than a rayed emanation. The upward curve of the present excrescences would, according to this interpretation, simply imply descending motion.

But the original suggestion that the figure on the *larnax* represents a divinity has now acquired new force from the discovery of distinctly religious subjects on two other sarcophagi of the same class. On that from Palaikastro^c we see the "horns of consecration," the sacred double axe, and attendant griffin. The more elaborately painted sarcophagus from Hagia Triada^d presents a succession of scenes of cult and offering in which the sacred double axe again occupies a prominent position.

If in the present design we may venture to recognise a great body-shield, we have another frequent concomitant of Minoan divinity.^e The body-shield in its more usual 8-shaped form appears on gems and signets, as well as in other religious representations, as the aniconic embodiment of the God or departed hero.

Upon the great signet found by Dr. Schliemann a small figure holding a large body-shield is seen in a position which clearly indicates a Sky God. On the

^a *Mycenæan Tree and Pillar Cult*, 74.

^b Compare especially the fresco of a female figure from the Queen's Megaron. Knossos Report, 1902. (*B. S. A.*, viii. 55, fig. 28.)

^c Bosanquet, *B. S. A.*, viii. 297 *seqq.* and plates xviii. and xix.

^d Paribeni, *Lavori eseguiti dalla Missione Archeologica italiana* (*Rendiconti della r. Acad. dei Lincei*, 1903, p. 29 *seqq.*).

^e See my *Mycenæan Tree and Pillar Cult*, 24 and 81 *seqq.*

painted slab from Mycenae a similar divinity, covered as in the former case with his body-shield, seems to descend upon an altar between two votaries. It looks as if in all these cases we had to deal with one and the same Minoan God, while the recurrence of the great shield recalls the prominent part played by shields in the ritual dance of the Curetes or Corybantes, who act as the guardians of the infant Zeus Krêtagenês. Doubtless in the more primitive form of the religion the shield itself was the fetish habitation of the divinity, and an echo of same idea survived in the magic virtues of the Roman *ancilia*.

The evidence afforded by the contents and arrangement of this late Minoan *thalamos* is in some respects contradictory. That we have here a tomb which had remained undisturbed since late Minoan times is evident enough. The carefully walled entrance and the groups of perfect vases still standing in their places sufficiently show that from the time when the last interment was made in the vault no plundering could have taken place. On the other hand there is equally distinct evidence of a certain amount of destruction in the tomb at some period previous to the final arrangement of its contents. The presence of some broken vases and stray fragments of others is a sufficient indication of this. Quite conclusive, moreover, as to a reinterment having taken place at the expense of a former occupant was the appearance of the remains of another *larnax* in the annexe to the original chamber, partly acting as a support for that which at the time of the opening of the tomb was found standing there. Such a reinterment may either have been the cause or the effect of the destruction which had taken place.

What is less explicable, considering the generally intact appearance of the vase groups belonging to the later interments, is the total absence of arms or of personal ornaments, with the exception of a fragmentary glass bead. Yet there was no sign of any previous breaking into the sepulchral chamber, and the non-disturbance of the bulk of the vases showed that any removal of other relics must have been the work of some one well acquainted with the arrangement within. It looks as if here as in other cases there had been a sacrilegious abstraction of valuable objects from the tomb by those responsible for its final closing in ancient times.

Reasons will be given below for concluding that this Milatos tomb belongs to a somewhat later period than that covered by the Zafer Papoura cemetery. It has therefore a peculiar value in the present connection for comparative purposes. The very late developments of the triton shell and octopus motives as seen on the large amphorae A and E belong to a ceramic fashion of which there is no

example in the Knossian cemetery. The decoration of the stirrup-vase F is still more significant. It is reproduced in all its particulars on a vase of the same form found in a chamber-tomb (a) at Mulianà in East Crete^a with late Mycenæan bronze swords of a type not represented in the Zafer Papoura cemetery, and a

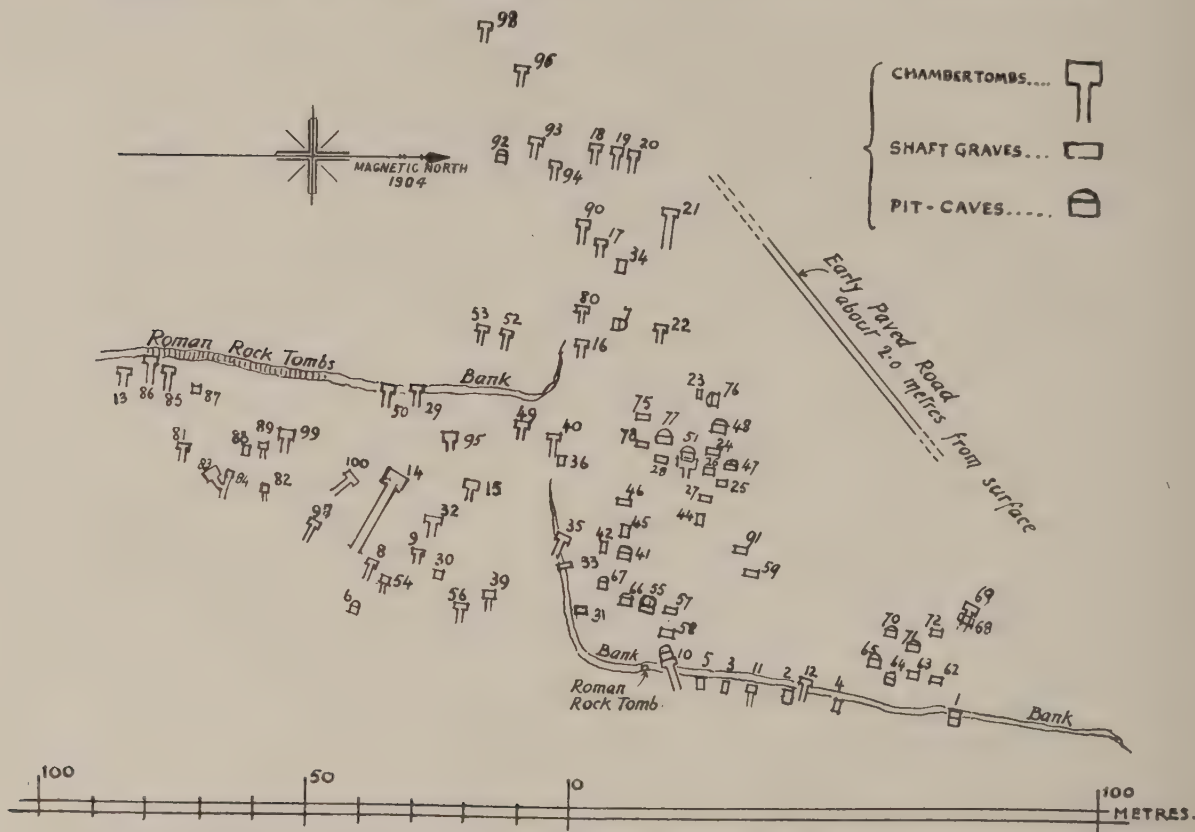


Fig. 108. General Plan of the Cemetery of Zafer Papoura.

bow fibula of a form characteristic of the transitional period when iron was coming into use for arms and implements.^b A vase from the contemporary tomb (b) at Mulianà shows a late and florid development of the octopus type,^c and

^a S. Xanthoudides, 'Εφ. 'Αρχ. 1904, p. 22 *seqq.* and p. 27, fig. 5 (the last vase but one to the right). Another stirrup-vase from the same tomb shows closely allied ornamentation.

^b For the importance of these Mulianà tombs in this connection, see my remarks below.

^c *Op. cit.* pl. I.

a *larnax* from the same grave exhibits a curved ornament, like that which in the amphora A, is a decorative extension of the sepia's tentacles. The occurrence of the blue glass bead with the impressed rosette ornament in the Milatos tomb may also be regarded as a somewhat late characteristic. None was found in the cemetery of Zafer Papoura.

§ 4. General Remarks on the Cemetery of Zafer Papoura.

Analysis of Graves.—A general plan of the cemetery by Mr. Fyfe is given in fig. 108. It will be seen that the 100 graves investigated in this cemetery were distributed in the following proportions :

Chamber-tombs	49
Shaft-graves	33
Pit-caves	18

Apart from the frequent signs of abstractions and disturbances on the occasion of re-interments in tombs of the chamber class, at least forty per cent. of the total number had been actually broken into and wholly or partially plundered.

When, however, we examine the proportion of robbed to intact interments in the different classes, it appears at once that it is far greater in that of the chamber-tombs than in the case of the others. Out of forty-nine chamber-tombs no less than thirty-one, or about sixty per cent., had been wholly or partially plundered. On the other hand, out of thirty-three shaft-graves only eight, or slightly under twenty-five per cent., had been robbed, and out of eighteen pit-caves only a single one, representing a proportion of under six per cent.

This result is no doubt due in a principal measure to the varying degrees of secretiveness inherent in these different systems of interment. It is obvious that the chamber-tombs with their larger area, their vaults always liable to fall in, and their entrance passages revealing an earth-filling in a rock cutting, offered exceptional facilities for discovery. Of the other two classes, the shaft-grave with an interment at the bottom of a pit, was clearly more liable to be rifled than a pit-cave where the interment was hidden in a walled recess in the side of the pit.

It is probable that the operation of these natural causes should also be taken

into account in the numerical results of the present researches. The numbers of shaft-graves and pit-caves actually existing in the cemetery may have been more nearly on a par than seems to be implied by the above tabulated list of the hundred graves opened. The negative phenomenon of the non-discovery as yet of contemporary shaft-graves and pit-caves in other parts of Crete also loses much of its importance.

The actual number of the intact tombs with which we have to deal is thus reduced to sixty, distributed as follows among the different classes :

Chamber-tombs	18
Shaft-graves	25
Pit-caves	17

The shaft-graves and pit-caves were constructed for the interment of individuals, and the evidence supplied by these when intact is of a comparatively simple kind. Once closed they were intended to remain so. Chamber-tombs, on the other hand, are in the nature of family vaults. They were reopened at various times for successive interments, and their earlier deposits were therefore continually liable to disturbance. There are abundant indications here, as in the case of the similar tombs of the lower town of Mycenae,^a that the *peculium* of the former dead was not always respected by those who took part in the later interments. There can be no doubt that metal objects of all sorts were especially liable to abstraction on these occasions, so that the absence of arms, metal vases, or jewelry in an interment of a chamber-tomb does not always mean that such were not originally placed within it. Sometimes we have the actual evidence of this. Thus in Tomb 49 an ivory mirror handle was discovered, but there was no trace whatever of the original metal disc which had accompanied it. The special phenomena afforded by the large Chamber-tomb No. 14 have been already dealt with above.

That a certain proportion of those interred in this cemetery were extremely poor may be gathered from the fact that in a series of undisturbed interments nothing was found beyond the actual remains of bones. Out of twenty-five intact shaft-graves eight contained no relics, and two more only a few beads besides the bones. Three very poor interments occurred among the eighteen pit-cave burials, and two of the undisturbed chamber-tombs supplied nothing beyond the decayed

^a See Tsountas and Manatt, *Mycensean Age*, 147.

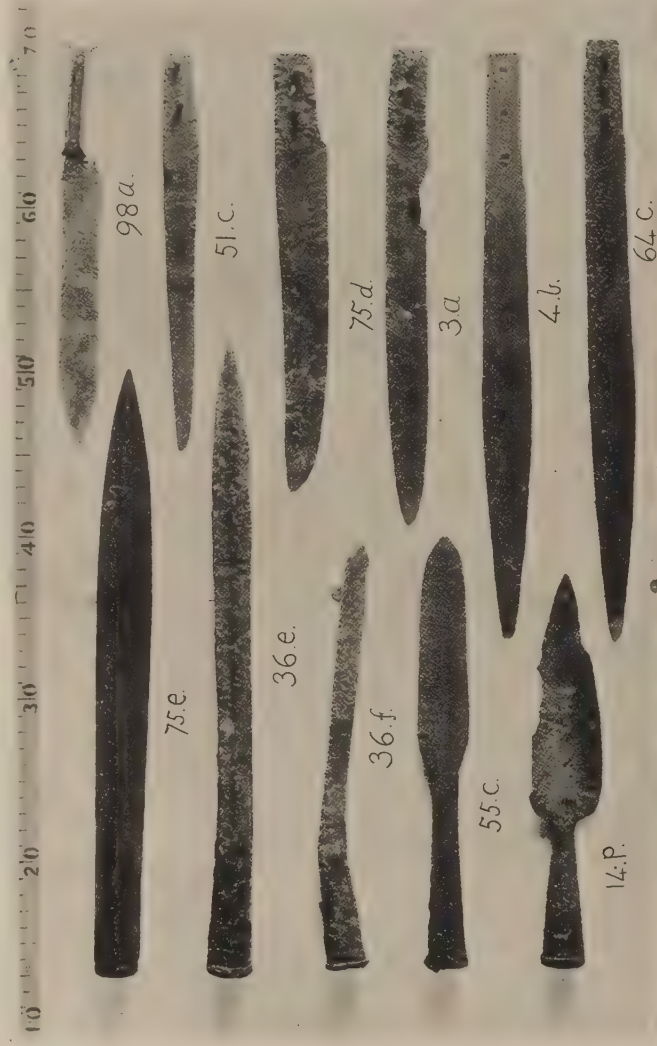


Fig. 113. Bronze Spear-heads and Knives from the Cemetery of Zafer Papoura.

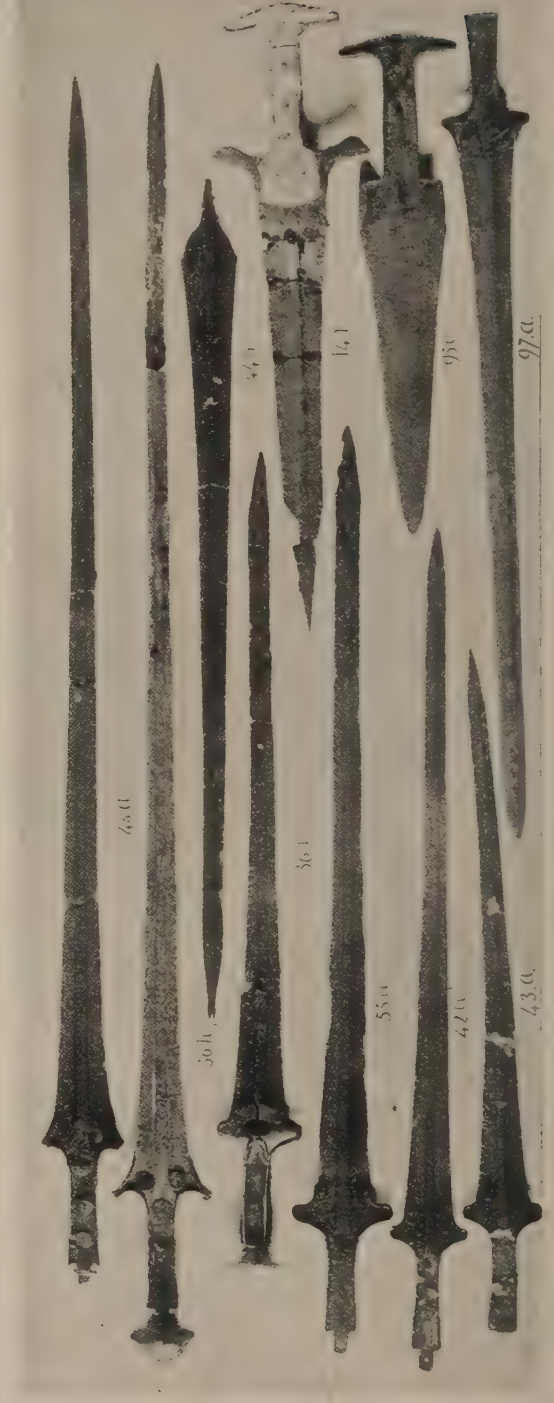


Fig. 109. Bronze Swords and Daggers from the Zafer Papoura Cemetery.

skeletons. Simple provision may have been made for the departed, even in these cases, in the shape of food and drink offerings placed in wooden bowls or vessels of some other perishable material. But the evidence tends to show that at least twenty-five per cent. of those buried in the cemetery were practically paupers.

The number of weapons found in the cemetery was proportionably considerable. Out of sixty intact interments were obtained as many as nineteen bronze weapons: five of them from chamber-tombs, nine from shaft-graves, and five from pit-caves.^a They may be classified as follows:

Long swords	.	.	.	.	2
Short swords	.	.	.	.	6
Daggers	.	.	.	.	3
Long knives	.	.	.	.	3
Spear-heads.	.	.	.	.	5

The types of swords and daggers found in this cemetery are presented in a collective form in fig. 109, Plate XCI. The detailed description of each will be found under the respective tombs.

The grandest weapons are the long swords, of which 44*a* attains a length of 91.3 centimetres, and 36*h* with its ivory pommel 95.5 centimetres. The high somewhat horn-like shoulders of the blade in these examples^b represent a slight development of the somewhat square upper termination of an early type of sword found in the Acropolis graves at Mycenae.^c This latter type, itself the outgrowth of a still earlier dagger form, belongs chronologically to the First Late-Minoan Period.

The derivative form, however, as seen in fig. 109, 36*h*, and fig. 110, with its horn-shaped offshoots, already makes its appearance among the later elements of

^a In Tsountas and Manatt, *Mycenæan Age*, 147, it is noticed that out of "sixty odd tombs" of the Lower Town no swords and only a single spear-head were obtained. This statement was published in 1897, but already by that year Dr. Tsountas had opened some thirty more tombs, the contents of which go far to make up for the paucity of weapons in the earlier explored group. Remains of eight short swords were found in these, distributed among Tombs 78, 81, 88, and 91. (Tsountas, 'Εφ. 'Αρχ. 1897, p. 104 *seqq.*) Another rich tomb opened in 1899 contained a white faience sword hilt. See below.

^b The shoulders of 44*a*, which had been broken off, are not shown in the photograph from which fig. 109 is taken.

^c *E.g.* Schliemann, *Mycenae*, 306, No. 466, "Grave I.," and 283, No. 449, "Grave IV."

the Mycenae shaft-graves.^a It may be regarded as typical of the Second Late-Minoan Age and the closing period of the Palace at Knossos. The decorative



Fig. 110. Horned long-swords from Graves Nos. 44 (*a*) and 36 (*b*).

^a Savignoni, *Necropoli di Phaestos*, 39, figs. 20, 20a.

^d The same characteristic foliate ornament is engraved on either side of the stem of a fragment of a sword blade from one of the Acropolis tombs at Mycenae. Sophus Müller, *op. cit.* 7, fig. 6.

^e Tsountas, 'Εφ. 'Αρχ. 1897, pl. 8 (2), pp. 107-8.

features of these swords, and in particular the microscopically fine reliefs of linked spirals that adorn the stems of the blade and the edges of the hilts in the Knossian examples (see above, fig. 66) show that technique in metal was still at an extraordinarily high level. The wealth and high artistic merit of the objects found in the Chieftain's Grave (No. 36) are certainly worthy of the period of art that moulded the latest Palace Style. As a matter of fact a beautiful onyx cameo^b was found in the Room of the Throne at Knossos, which belongs to this period, showing a sword, attached to its belt, with horned off-shoots resembling those of these long swords.

The contemporaneity of this type of horned guard with the last period of the Knossian Palace is moreover borne out by the contents of one of the richest tombs at Phaestos (No. 8). In it was found, together with a spouted vessel identical with 36*b* from the Chieftain's Grave at Knossos, a short sword with horned shoulders similar to the above.^c Both the shoulders and the sides of the hilt were in this case adorned with gold plates presenting an embossed foliate decoration altogether characteristic of the late Palace Style.^d

A short sword of the horned type, 61 centimetres in length, was found in Tomb 81 of the Lower Town of Mycenae, belonging, however, as some of its contents show, to the earliest and best period of that necropolis.^e

^a See the sword fragment reproduced by Sophus Müller, *L'origine de l'Age de Bronze en Europe*, 9, fig. 14 (*Matériaux*, etc. 1886), and the dagger blade, *op. cit.* 11, fig. 17.

^b It is mentioned in my Report, *Knossos*, 1900, p. 41.

The Knossian horned swords derive a new interest from the recent discovery of a bronze sword of a similar type, but without rivet holes in the hilt, by Mr. R. A. S. Macalister in a grave of the newly-discovered cemetery of Gezer in Palestine.^a We have here a tangible record of Minoan connexion with the easternmost Mediterranean shores which eventually attached the Philistine name to a large part of Canaan and gave Gaza her Minoan traditions and the cult of the Cretan Zeus. In the same cemetery was found painted pottery with designs characteristic both of the later Palace period,^b and of the ensuing age of incipient decline. The circumstances of its finding seem to show that the horned sword of Gezer may have been a somewhat late example of its type,^c or possibly a colonial outgrowth.

A further development of this horned type is seen in the hooked guard observable in certain swords and daggers of the ensuing period. A good example of this is supplied by the fine ivory hilted dagger (fig. 109, 14*r*, and fig. 39*p*, above) found in the largest of all the chamber-tombs at Zafer Papoura (No. 14). This form of hooked guard absolutely resembles that of two swords^d contained in the bronze hoard found in one of the Acropolis houses at Mycenae and belonging to a later date than the shaft-graves.

The short sword (fig. 109, 44*b*, and fig. 111) found in company with one of the two long horned swords referred to above seems to have as close a connexion with the Western enterprise of Minoan Crete as the horned type with its expansion Eastwards. In this type, which stands apart from the rest of the



Fig. 111. Tanged round-shouldered sword from Grave No. 46.

^a For a preliminary account of this cemetery, see Quarterly Statement of the Palestine Exploration Fund, 1904, pp. 320 *seqq.*

^b *E.g.* the decadent triton shell ornament, in a stage resembling that seen on the vase from Milatos. (See above, fig. 106*r*.)

^c A curved bronze sword or scimitar of Egyptian type was found in the same grave (*op. cit.* p. 335, fig. 4). Several bronze scimitars of this type are represented on the tomb of Rameses II. (1170 B.C.). But the horned sword type can hardly come down so late in Crete itself.

^d Tsountas, *Ἐφ. Ἀρχ.* 1891, pl. ii. 5, and p. 25; Perrot et Chipiez, *Grèce Primitive*, 976, fig. 551. A still more decadent variety of this type is seen in a bronze sword in the British Museum (acquired in Corfu). Undset, *Die älteste Schwertformen. Z. für Ethnologie*, 1890, p. 13, fig. 20.

series, the shoulders of the blade are rounded off with a rivet on either side, and terminate above in a tang for another rivet (fig. 111). This tanged round-shouldered type is a variant or outgrowth of the commonest form of sword found in the shaft-graves of Mycenæ.^a The example from Grave 44 was the only specimen of this type found in the Knossian cemetery, and its complete absence in all the other Late Minoan or advanced Mycenæan cemeteries tends to show that it had ceased to be in vogue in the Ægean world in the Third Late-Minoan Period.

This conclusion derives special interest from the reappearance of bronze swords and daggers of a closely allied type in certain Sikel tombs explored by Dr. Orsi.^b Tombs of the same class also contained imported Mycenæan or Minoan pottery of very advanced character^c (Late-Minoan III.), with which, as we have seen, this tanged type is never associated in the Ægean area. How then, it may be asked, can swords of such early association be found in the same Sicilian tombs? The answer seems to be quite simple. The swords or daggers of the Sikel tombs, though starting from the same Ægean type, are not absolutely identical in form either with those from the Mycenæ shaft-graves or that of the Knossian tomb, the uppermost rivet for instance coming down below the base of the tang. The section of the blade is often a simple rhomboid, and the fabric is quite inferior. Already Dr. Naue^d had been led to what seems to be the right conclusion, namely,

^a Undset, *L'Origine de l'Age de Bronze en Europe*, Matériaux, etc. 1886, p. 5, fig. 1, p. 7, figs. 6, 8. J. Naue, *Die vorrömischen Schwerter*, pp. 3, 4, Atlas Taf. III. 3. Schliemann's illustrations of these swords are useless for scientific purposes.

^b *Necropoli sicula di Plemmirio* (Siracusa), *Bullettino di Paletnologia*, 1891, Tav. xi. 4, 8, 16, pp. 121 seqq. 125, 131. *Necropoli sicula presso Siracusa*, *Monumenti Antichi*, Vol. ii. Tav. ii. 5, 13, 18, p. 25, seqq. *Thapsos*, *Monumenti Antichi*, vol. vi. pp. 121, 122, fig. 31. *Nuovi materiali siculi del territorio di Girgenti* (*Bull. di Pal.* 1897, Tav. ii. 1, 2, p. 10 seqq.).

^c See, for instance, the painted "amphora" from Milocca, Orsi, *Bull. di Paletnologia*, 1889, p. 206, seqq. Tav. vii. 5, 9, closely resembling types from Ialysos, and of late-Mycenæan graves in Cyprus. Other late imported vases of the same class were found in the cemetery of Thapsos (*Monumenti Antichi*, vol. vi. Tav. iv. 8, 12, Tav. v. 7, 18, 24, etc.) A two-handled cup from Cozzo Pantano (Orsi, *Monumenti Antichi*, vol. ii. Tav. i. 2, and pp. 9, 10) shows a design identical with a part of that on a cup of similar form, from a very late Mycenæan tomb at Haliki in Attica (*Myc. Vas.* Taf. xviii. 122).

^d *Die vorrömischen Schwerter*, p. 9. "Wenn die mykenischen Schachtgräber-Schwerter eine hohe Vollendung bezeugen, so fehlt dieselbe den sikulischen Schwertern, in folgedessen ich nicht glauben kann, dieselben seien in Mykenæe angefertigt und von dort nach Sizilien eingeführt worden; vielmehr bin ich der Ansicht dass die sikulischen Schwerter Nachbildungen jener Mykenæe-Schwerter sind." He notices the parallel fact that some of the indigenous Sikel vases were imitated or derived from Mycenæan types.

that the swords of the South Sicilian cemeteries are derived indeed from Ægean prototypes, but are of indigenous fabric. Their great interest lies in the fact that they point back to a period of intimate contact between Sicily and the Ægean world during the great days of the late Minoan civilisation, the period of the shaft-graves of Mycenæ, and of the Later Palace of Knossos.

But how was this early influence so intensive? In view of the persistent Cretan traditions which connected the fall of the Minoan Empire with a great Sicilian expedition, and even placed the tomb of Minos on Sicilian soil, the possibility of a Cretan colonising movement to the West similar to that which planted Cretan and other Ægean settlers in Canaan and Cyprus must be always borne in mind. There are even indications that, as in Cyprus, so also in Sicily there may have been colonial fabrics in the Minoan style. A painted vase found by Dr. Orsi in a Sikel tomb at Cozzo Pantano, near Syracuse, and described by him as of "late Mycenæan" fabric,^a bears on it a decoration consisting of groups of reeds or grasses. But this decoration is simply a late derivative from the very characteristic grass designs seen upon the Palace pottery of Knossos.^b This decorative motive was specially common during the first Late-Minoan Age,^c and had practically gone out of use by the close of the Palace Period. As far as our evidence goes no local Ægean school perpetuated it, and its appearance in a later guise on Sicilian soil is curiously parallel to the survival under an indigenous guise of types of sword and dagger of the same Ægean derivation.

In view of such a phenomenon and its possible explanation in the existence of a Minoan colonial plantation on Sicilian soil, the occurrence of a nearly related sword type at Knossos in a tomb belonging to the later Palace Period has a peculiar interest. It must not be forgotten in this connexion that the Dove Goddess of Minoan Crete, whose early shrines have been lately brought to light, seems to be the elder sister of the Goddess of Eryx, alike in symbol and attributes;^d and that to the last the Sicilian cult preserved the traditions of its Cretan origin.^e

^a *Mon. Ant.* vol. ii. p. 10, Tav. i. 2.

^b See D. Mackenzie, *The Pottery of Knossos*, 194, 195, and fig. 11. (J. H. S. xxiii.)

^c Similar grass designs, but white on a dark ground, are already found on Knossian pottery of the Third Middle Minoan period.

^d I have already made this comparison in my *Report on the Excavations at Knossos*, 1903, pp. 87, 89, and 93.

^e *Diod.* v. 77, 5.

The other type of short sword with which a horned long sword is associated, in the present cemetery is that which among all the weapons found here is the best represented. (See Plate XCI. fig. 109, 36*i*, 42*a*, 43*a*, 55*a*, and 98*a*).^a

In place of the horns of the other type we see here the upper part of the blade terminating in rounded projections, so that the whole has a somewhat cruciform aspect. (See fig. 112.)

The fine naturalistic design on the gold plates of the sword of this type from the Chieftain's Grave (fig. 112; see above, fig. 59), as well as the microscopically executed spirali-form reliefs on the blade of this and 42*a*, identical with those of the long-swords, may themselves be taken as sufficient indication that their fabric fell within the limits of the later Palace Period at Knossos. As a matter of fact, a small fragment of a crystal hilt analogous to the agate hilt from Mycenae, belonging to the same type of sword, actually came to light in the Palace. A similar hilt of white faience was, moreover, found in a chamber-tomb of the Lower Town at Mycenae, accompanied by magnificent painted vases of the later Palace Style. The contents of this tomb, excavated by Dr. Tsountas in 1899,^b have been since described by Mr. Bosanquet,^c and have a special bearing on the relation of Minoan Crete to the Mycenæan mainland.

Among the objects found were faience tablets for inlaying, bearing marks that occur on those of the latest plaques of this material produced by the Palace manufactory at Knossos,^d and there can be little doubt that the white faience of the sword hilt and pommel were produced in the same royal fabric. The same tomb contained an imported Egyptian vase of alabaster of an early Eighteenth Dynasty



Fig. 112. Gold-mounted bronze sword of cruciform type from the Chieftain's Grave (No. 36).

^a Wrongly indicated on the figure as 97*a*.

^b *Πρακτικά*, 1899, p. 102.

^c *Journal of Hellenic Studies*, xxiv. (1904), p. 322, *seqq.* and pl. xiii. xiv.

^d The *Α* for instance. Plaques of similar character occurred in the Room of the Throne (cf. *Knossos, Report for 1900*, p. 42). For the Royal Faience Manufactory at Knossos see especially *Report*, 1903, p. 62 *seqq.*

type in style closely resembling one to be described below, from the royal tomb at Isopata.

Plates of another hilt similar to the above mentioned and cut out of single pieces of agate or onyx, the material closely recalling the pommel of the gold-mounted sword from the present cemetery, were found, together with a horned short sword, in Grave 81 of the Lower Town of Mycenae.^a The plates of this had never actually been fixed, and though the discs for the rivet heads had been sunk no perforations had been made for their pins.

The Cretan wild goats engraved on the gold plates of the sword-hilt from the Chieftain's Grave and the Knossian faience of the similar example from Mycenae tend to show that during the latest Palace Period swords of this cruciform type were a characteristic product of the royal armourers. It would also appear that swords of similar form continued in use during the immediately succeeding period, here referred to as the Third Late-Minoan. A sword of the same description, but without the fine spiraliform decoration of the blade and flanges, was found in Grave 55 of the present cemetery, associated with a painted stirrup-vase showing foliate decoration of a slightly decadent character. (Fig. 73). A sword of this type was found at Ialysos,^b and in a kindred form from the same Rhodian cemetery the tang for the attachment of a pommel is discarded and the hilt with its flanged border widens out at the upper end.^c Here and elsewhere the associations of this latter variety indicate a somewhat late date. One of them was found in a stratum above the shaft-graves at Mycenae,^d and the modification of the hilt answers to the form in vogue in the very latest Mycenæan Age.

This extension of the flange or metal band of the hilt round its upper extremity, so as to afford an additional hold for the pommel, itself represents a further development of the more primitive form of hilt with its simple tang of metal. It is therefore a noteworthy fact that among the weapons from the

^a Tsountas, 'Εφ. 'Αρχ. 1897, pl. 8 (5) and p. 108.

^b Furtw. u. Loeschke, *Myk. Vases*, Taf. D. 13.

^c *Op. cit.* Taf. D. 11, and p. 8. This sword was found in Grave IV. with painted pottery in the last stage of Mycenæan degeneration (cf. *op. cit.* Atlas, Taf. iii. 19, 20.) A restoration of the hilt is shown by Naue, *Die vorrömischen Schwerter*, Atlas, T. v. 4a. The sword is also figured in Undset, *Die ältesten Schwertformen*, p. 12, fig. 16. Another example, from Corinth, is given *op. cit.* p. 13, fig. 18.

^d Schliemann, *Mycenae*, 164, fig. 238.

present cemetery we see this later system adopted only in a single example, the dagger, Plate XCI. fig. 109, 95*e*. This specimen belongs to a class of short swords and daggers extremely characteristic of the very latest Mycenæan culture. In this class the upper part of the blade is cut square, and the blade is exceptionally flat and broad. Swords and daggers of this type have been found in the Idæan Cave, in Carpathos, at Corinth, Athens, Dodona, and elsewhere.^a

But the most striking evidence of its comparatively late date is supplied by the inventory of a Mycenæan chamber-tomb at Mulianà in East Crete, described by Dr. Xanthoudides.^b Two well-developed short swords of this form and part of a third were here found in association with very late Minoan pottery (see below), and a pair of bronze bow fibulas with stilted catch, a close forerunner of the geometrical types belonging to the Early Iron Age. Short swords and daggers of this Late Minoan class were the prototypes of a form of short sword or dagger widely distributed throughout Southern and Central Italy,^c and coming well down into the Iron Age. The type was also perpetuated in Classical Greece, as may be seen by a sword, unquestionably of the same pedigree, depicted on a black-figured amphora signed by Amasis.

It will be seen that the swords proper, as distinct from daggers, found in the Knossian cemetery, divide themselves according to size into two groups, the long swords ranging in length from about 91 to 95 centimeters, and the short swords varying between 50 and 61 centimetres. These measurements closely correspond with the average proportions of the two classes at Mycenæ and elsewhere. From

^a See Naue, *Die vorrömischen Schwerter*, p. 10, Taf. v. 3; Undset, *Die ältesten Schwertformen* (*Z. f. Ethn.* 1890, p. 14 *seqq.* fig. 24); Tsountas, 'Εφ. 'Αρχ. 1897, pl. 8 (4), p. 111; Dr. Naue, *loc. cit.*, describes a variant form in Professor Flinders Petrie's possession from Thebes in Egypt.

^b 'Εφ. 'Αρχ. 1904, p. 22 *seqq.* The swords are reproduced on p. 29, fig. 7. They were from Tomb A, a part of which had been later occupied by a Geometrical interment. There is, however, no doubt from their form and position that the fibulas belonged to the earlier sepulture. In the blades of the swords from this tomb there is visible a slight tendency to assume the leaf-shaped form characteristic of the later class intended for cutting rather than thrust.

^c Montelius, *Civilisation primitive en Italie*, II^{me} partie, pl. 348 (4), 252 (1, 2), 276 (25 and 27). See Dr. Naue's observations, *op. cit.* pp. 11, 12 (Taf. vi. 1). A good example from Cuma, together with its sheath, is in the Ashmolean Museum at Oxford. The type is also found in Sicily. (Orsi, *Ripostiglio di Modica*; Bull. di Pal. xxvi, 1899, Tav. xii. 1, 5, pp. 170, 171). It must be observed that the shape of these weapons is considerably differentiated from that of their prototypes. The shoulders of these Italian swords are rounded, and the stem of the hilt widens out at the middle. The links connecting them with the Late-Minoan type described above must be sought elsewhere, presumably in Greece.

the contents of Graves Nos. 36 and 44, it would appear that thoroughly equipped warriors possessed a sword of either size. All the swords found were for thrusting, and it is a sign of the comparatively early date of the tombs opened that no example was here discovered of the later class of sword with the blade adapted for cutting rather than thrusting.

This later type, with its rounded shoulders, its more numerous rivet-holes, and the flanges of its hilt curved outwards at the top, is specially interesting from its wide European diffusion, and from the fact that the earliest Iron Age type of Greece is simply its translation into that metal. The earliest bronze form of this class of sword with straight edges is best represented by finds from Central Italy, but it also extends to Hungary, the north-west corner of the Balkan peninsula, and more sporadically to Greece. It is also known in Crete. In Tomb B at Mulianà, the Cymbal-player's Grave, together with Late-Minoan pottery of the same date as that of Tomb A referred to above, were found two short swords of this type. They are, however, somewhat late examples of their class, as the blade shows a slight tendency to increase in breadth towards the extremity. In Crete, as in mainland Greece and in Cyprus,^a the iron swords of the succeeding Geometrical Age are copied from this class. Whether the ultimate source of this type is to be sought in the Balkan lands^b or in Italy,^c its Southern distribution, which extends to Egypt, must be regarded as due to a wave of influence from the North-West. The absence of any example of this Continental form in the Knossian cemetery must therefore be regarded as a negative phenomenon of some importance.

Among the daggers not answering to any sword type, that from Grave 86 (fig. 90) shows a single rivet at the top of the blade and flanges curving outwards at the upper extremity of the hilt, in this respect resembling the last-mentioned swords and those of the succeeding Geometrical class. It is interesting to note that a bronze dagger of absolutely identical form and with the same groovings of

^a For the distribution of this type of sword see especially J. Naue, *Die vorrömischen Schwerter*, p. 12 *seqq.* For the influence of this bronze type on the iron swords of the Geometrical Period in Cyprus see my remarks in *Mycenean Cyprus*, etc. (*Journal of the Anthropological Institute*, xxx. 1900, p. 218 *seqq.*).

^b S. Reinach, *Mirage Oriental*, p. 37 (575), and Tsountas (independently), 'Εφ. 'Αρχ. 1897, p. 119, have shown the fallacy of the theory put forward by Sophus Müller (*Nord. Alterthumskunde*, p. 244) and Undset (*Z. für Ethn.* xxi. 3) that this "Danubian" type of sword had reached its northern habitat through Greece from Egypt.

^c This is Dr. Naue's conclusion, *op. cit.* p. 15.

the blade was found in a Sicilian tomb at Valledolmo, near Caltanissetta.^a A closely parallel type with a smooth blade, of which an example occurred in the Dictæan Cave,^b also came to light in a tomb of the Sikel cemetery at Pantalica,^c where many imported vases of a Late-Minoan character also came to light. The type recurs not only in Central Italy,^d but in prehistoric hut remains near Forlì,^e the *terremure* of the Modena district,^f and in the pile settlement of the Lago di Guarda.^g The dagger *c* from Grave 62 of the present cemetery preserves the tradition of earlier Minoan forms.

Of the spear-heads, what appears to be the most effective weapon, the narrow form (see Plate XCI. fig. 113, 36*e* and 75*e*), in which the blade merges almost imperceptibly with socket, recurs at Ialysos.^h The long knives (4*b*, 64*c*, and 80*a*), varying in length from 26.5 to 37 centimetres, are worthy to compare with the *seaxe* of the Germanic warriors, from which the name of Saxon is said to have been derived. They were perhaps mainly used in the chase, as seems also to have been the function of the bronze arrows found in the Hunter's Grave (No. 10). It has been already suggested that the perforated sections of boars' tusk found with a sword and spear in the pit-cave No. 55 were plates of a helmet.

The smaller implements found in the Knossian cemetery answer for the most part to forms already known, illustrated by the contents of contemporary graves at Mycenæ and elsewhere. Bronze saws of the kind found in the Carpenter's Grave (No. 33), fig. 48, some of them of larger dimensions, have come to light on other Cretan sites.ⁱ The knife, with its broad rounded blade and fine olive-wood handle, found in the *larnax* of Grave 80, at the foot of the crouching figure (see above, fig. 88), resembles in outline one found in Grave 4 at Ialysos,^j with

^a Colini, *La civiltà del bronzo in Italia*, ii. (Bull. di Paletn. xxxi. (1905), p. 39 and fig. 148, Colini justly regarded this dagger as a Mycenæan importation.

^b Hogarth, *B. S. A.* vi. p. 110, fig. 41.

^c Orsi, *Pantalica e Cassibile* (Mon. Ant. ix. Tav. vii. 17).

^d Montelius, *Civilisation primitive en Italie*, 11^{me} Partie, pl. 131 (25).

^e "Fondi di Capanna" of Bertarina. Montelius, *op. cit.* I., Série B. pl. 23 (2) (Excavations of A. Santarelli).

^f Montelius, *Civilisation primitive en Italie*, I., Série B. pl. 22 (15) (Terramara di Sant' Ambrogio, Modena); Munro, *Lake Dwellings*, p. 259, fig. 85 (12) (Montale, Modena).

^g Montelius, *op. cit.* I. Série B. pl. 7 (16-18); Munro, *Lake Dwellings*, p. 225, fig. 65 (13, 14).

^h Furtw. and Loeschke, *Myk. Vasen*, Taf. D. 4, 5.

ⁱ *E.g.* at Hagia Triada, and Gournia. A miniature example was procured by me among the votive bronzes of the Dictæan Cave.

^j Furtw. and Loeschke, *Myk. Vasen*, Taf. d. 17, and p. 8.

painted amphoras of degenerate type ^a (Late-Minoan III.). A smaller knife found in Grave 13 of the present cemetery (fig. 31 above) had also its handle preserved, in this case of ivory. A knife in Grave 7 (fig. 19) had a solid handle of bronze.

Among the articles of the toilette the most conspicuous are the bronze mirrors, which here as at Mycenae were as much part of the furniture of the men's graves as of the women's. Twelve of these were found ^b and the ivory handles of two others whose metal plates had probably been abstracted in ancient times. In some cases a pair of these had been placed in a grave, in No. 6 apparently with a single interment. The ivory mirror handle from Grave 49 with its fine relief of a couchant winged sphinx (see above, fig. 69), fits on very closely in style and execution to the ivory carvings of sphinxes and griffins from Mycenae, Spata, and the Acropolis at Athens.^c It is noteworthy, as a rough indication of date, that among other objects found with the wing of a similar ivory sphinx in the room of a house at Mycenae was a scarab with the name of Queen Tyi the wife of Amenhotep III.,^d and probably belonging to the first quarter of the fourteenth century B.C.

Mirrors are absent in the shaft-graves at Mycenae,^e and it looks as if they had been first introduced about this time from Egypt. A confirmation of this view may be found in the form of the stem of the ivory handle in the present example and in those from the contemporary graves of the Lower Town of Mycenae. These will be seen to terminate above in the heads of somewhat conventionalised palm trees with their leaves curving down. But these palm leaves are simply the Minoan or Mycenaean adaptation of the recurved petals of the lotus flowers that crown the handles of the Egyptian mirrors.

Amongst other articles of toilette from the Knossian cemetery may be noticed remains of a bone comb and several bronze tweezers probably used for depilatory purposes. Bronze razors were numerous. Of these the most usual class was provided with somewhat curved blades with a single edge and in form not unlike the modern instrument (see above, figs. 63 and 98). This type was also well represented

^a *Op. cit.* Atlas, Taf. iii. 19, 20.

^b Their diameters varied from about 13 centimetres to 18 centimetres.

^c See Tsountas, 'Εφ. 'Αρχ. 1887, pl. xiii. A and B, and pp. 170-173; 1888, pl. vii. 6, pl. viii. 14, pp. 145, 147; Perrot et Chipiez, *Grèce primitive*, pp. 832, 833.

^d 'Εφ. 'Αρχ. 1887, p. 169, and pl. xiii. 21 (wrong way up).

^e See Tsountas and Manatt, *Mycenaean Age*, 146.

in the tombs of Phaestos,^a and in those of the Lower Town at Mycenae.^b These razors, which from their very thin blades needed perpetual sharpening, are often found in pairs.^c The type is wanting, like the mirrors, in the royal graves of Mycenae, and its characteristic outline suggests that it is derived from an Eighteenth Dynasty type of Egyptian razor.

The absence of this type of razor in the early tombs of Mycenae might in itself be sufficiently accounted for by the fashion of wearing the hair which then prevailed on the mainland of Greece. The gold masks from the shaft-graves show, indeed, that at Mycenae some of the royal personages wore beards, and bearded men are seen among others in the siege scene of the silver vase fragment.^d At Mycenae, indeed, the fashion survived to a later period, witness the bearded warriors of the frescoes of the Palace Megaron,^e the heads of the gold-inlaid silver bowl^f from Tomb 24 of the Lower Town, the helmeted head of ivory from Tomb 27,^g and those again on the Warrior Vase. It will be seen, however, from the above examples, that in the later Mycenaean Age the moustache was shaved off.

A very early class of stone figurines found in Crete, those namely from the archaic *tholos* ossuary of Hagia Triada, give indications of a pointed beard resembling that seen on what may be legitimately regarded as their Egypto-Libyan prototypes.^h But, with this exception, all the early records of Minoan Crete, including the marble "idols" which the island shares with the Cyclades, show beardless faces, and, indeed, the abundance of obsidian knives must much have facilitated the practice of shaving in this Ægean region. The male figures of the votive deposits of the succeeding Middle Minoan Period, like that of Petsofà, betray no

^a Savignoni, *Necropoli di Phaestos*, 45 and 46, fig. 24.

^b Tsountas, 'Eφ. 'Aρχ. 1888, pl. ix. 18. The more triangular form, with the exceptionally broad blade found in the large chamber-tomb No. 14 also recurs at Mycenae (*ib.* pl. ix. 17), and an example was found in a tomb at Artsà in East Crete. Xanthoudides, 'Eφ. 'Aρχ. 1904, p. 19, fig. 3.

^c The duplex Italian razor of the Late Bronze and Early Iron Age, a form also propagated throughout North-West Europe, originated in the linking together of such pairs of razors.

^d Tsountas, 'Eφ. 'Aρχ. pl. vii. 2, and p. 159 *seq.* The moustache is shaved off and the beard well trimmed.

^e 'Eφ. 'Aρχ. 1887, pl. xi.

^f 'Eφ. 'Aρχ. 1888, pl. vii. 2, and p. 159.

^g 'Eφ. 'Aρχ. 1888, pl. viii. 12.

^h Flinders Petrie, *Naqada*, pl. lix. and compare J. E. Quibell, *Hierakonpolis*, part i. pl. v. and pl. vi. 1-5. The striking points of resemblance between the two groups of figurines have been rightly insisted on by Dr. Halbherr, *Scavi eseguiti a H. Triada*, etc. (*Memorie del r. Istituto Lombardo*, 1905, p. 251, and see Tav. xi. fig. 27.)

trace of beards. The paintings, reliefs, and intaglios of the great Palace Period at Knossos, Phaestos, Hagia Triada, and elsewhere tell the same story. It is moreover a specially significant fact that the head, not improbably of a king, associated with that of his young son, on a sealing^a belonging to the very earliest period of the Knossian Palace, the period that immediately precedes that of the earliest royal tombs of Mycenae, is also shown without a beard.^b

In view of this concordant evidence it is reasonable to suppose that, in spite of the facilities afforded by the knives of volcanic glass, the use of metal razors began early in Minoan Crete. In addition to the well-known type described above, and which seems to have been of quite recent Egyptian derivation, I have ventured to recognise as razors certain leaf-shaped implements with very fine blades and two cutting edges (see fig. 78), of which six specimens were found in the Knossian cemetery.^c That this type goes back to the earliest elements of the cemetery and comes within the limits of the Palace Period is shown by the occurrence of a razor of this form with the stirrup-vase of fine early style (fig. 83) in the shaft-grave No. 68. The type recurs at Ialysos,^d and a variant form without the tang, but otherwise identical, is published by Sophus Müller,^e as having been found by Schliemann at Mycenae. There seems to be good warrant for recognising in these leaf-shaped blades the earlier form of Minoan razor, and it is worth noting in this connexion that among the earliest metal instruments of pre-dynastic Egypt found in the Naqada graves was a tanged blade of copper with a rounded end and of extremely thin fabric,^f which has every appearance of having been a razor. It is a curious fact that among the Bronze Age remains of the European area leaf-shaped razor blades with a tang are only found again, *longo intervallo*, in the British Islands.^g

^a To be published in my general work on the Palace of Knossos.

^b It is possible that in the very latest Minoan Period of Crete the Continental fashion may have been imitated. Some late figurines from H. Triada (Halbherr, *Mon. Ant.* xiii. 1903, p. 74, figs. 56, 57) seem to show pointed beards.

^c In Grave 4 one specimen of each of the two kinds of razor was found.

^d Furtw. u. Loeschke, *Myk. Vasen*, Taf. D, 19, 19.

^e *L'Origine de l'Age de Bronze en Europe*, p. 13, fig. 23, and p. 14. Sophus Müller describes it as a knife, but notices its resemblance to some early European razors.

^f Petrie and Quibell, *Naqada and Ballas*, pl. lxx. 4.

^g J. Evans, *Ancient Bronze Implements of Great Britain*, pp. 216, 217, figs. 265, 268. That from Winterslow had already been recognised by Dr. Thurnam, who published it in *Archaeologia*, xlii. Plate XXII. fig. 8, as a razor blade. But these British types are very divergent from the Cretan, and have no probable connexion with them. It is possible even that like other British types

None of the bronze vessels found in the graves of Zafer Papoura rises to the high artistic level of those found together in the west building of the Palace site.^a This in itself is not surprising when it is remembered that in the present case we have to do not with royal treasure but with the household belongings of ordinary citizens. The purest decorative element is that presented by the bronze ewer from the Chieftain's Grave, No. 36, with its relief in the shape of cockle shells at the upper and lower attachments of the handle,^b such shell reliefs appearing already on the finest pottery and faience ware of the close of the Middle Minoan Period.

The magnificent sword from the same grave, with its engraved gold plates, would alone have been sufficient to show that this interment comes within the limits of the Palace Period of Knossos. It has already been pointed out that the two other bronze vessels found in this grave, a spouted pan and a small "frying pan," answer to two very similar bronze vases found in Grave No. 8 at Phaestos in company with a gold-plated sword with an embossed foliate decoration characteristic of the late Palace Style.

The large chamber-tomb No. 14 afforded the most complete group of bronze household utensils found as yet in any Minoan or, it may be added, Mycenæan grave.^c Of these the interesting lamp (*f*) with the chain for its trimmers and the shallow one-handled bowl (*b*) evidence their identity of fabric by a decoration consisting of a raised reticulated pattern of easy mechanical execution, suggestive of turner's work, and very different from the beautiful lily chains and foliage that adorn the rims of the bronze bowls of the Palace hoard referred to above. The high-spouted ewer (*l*) shows round its shoulders a decoration of a similar mechanical character.

The general resemblance in the bronze bowl (14*b*) with its curled handle to those from the Palace site (see fig. 116) nevertheless forbids us to bring it down to a much later date, and types represented by the two-handled pan (*d*) as well as the knob-handled "frying pan" (*e*) recur among the bronzes of the Chieftain's Grave, and those of a chamber-tomb at Phaestos, the archæological equations supplied by

(J. Evans, *op. cit.* 218, 219) they are simply late developments of the duplex Italian form. A tanged Sicilian type (Colini, *Bull. di Paleon.* 1905, p. 59, fig. 159), with a two-edged blade rounded at the end, preserves traces of a similar origin. It forms a double blade with a slight indentation at the end.

^a *B. S. A.* 1903.

^b See above, fig. 54.

^c See above.

which, as already pointed out, take us within the limits of the Palace Period. The bronze jug (*y*) from the same tomb-group, with its upright handle at the neck and horizontal handle to the body, has been shown to belong to a widely distributed class of vessels of which the earliest representatives are the seven copper jugs found in Schliemann's Fourth Grave at Mycenae. If this may be regarded as the prototype of the classical *hydria*,^a the three-legged cauldron, fig. 38, with its two upright handles seems to be the true predecessor of the tripod *lebes* of the succeeding Geometrical Period,^b though in the latter case the proportions both of the legs and handles have increased.

It has already been noted that the knobbed vertical projection rising from the horizontal handles of some of these bronze vessels, paralleled by the single knobbed handles of certain smaller pans, may have been found useful for winding stuff round in order to obtain a hold of the vessel when heated. Vessels with this type of handle, unknown among the vessels from the shaft-graves at Mycenae, were widely diffused in Crete^c in Late-Minoan times. It seems, moreover, as if a tablet from the Palace referring to a set of metal vessels gives a delineation of a bowl with two handles of this kind,^d accompanied by another with a rolled handle, like those found in the Palace hoard.

Bronze vessels occurred in three graves only (Nos. 14, 36, and 99) of the present cemetery. The possession of such denoted a standard of wealth to which the many could not aspire, and perhaps, where they did exist, the piety of the surviving relatives may not always have risen to such a pitch as to induce them to deposit them with their owner. It must also be borne in mind that such metal objects were specially liable to abstraction in the case of later interments in the same tomb. But if the actual vases in metal could not usually be spared for the *peculium* of the dead, there was a natural tendency to supply the omission by imitative forms. The stone bason 99*d* is a very literal copy of one of the contemporary bronze basins with similar handles, like those of the Palace hoard. More usually, however, imitations were in painted clay. There can be no doubt

^a Cf. Savignoni, *op. cit.* 46, 47.

^b The tripod vessel of copper found at Mycenae (Schliemann, fig. 440) with its spout and three handles, two horizontal and one vertical, has no such claim.

^c That from Phaestos has been mentioned above. I obtained another from a Late-Minoan chamber-tomb at Kavusi in East Crete, now in the Candia Museum.

^d An illustration of what remains of this tablet is given in my Report on the excavations at Knossos in 1903 (*B. S. A.* ix. 128, fig. 84), but I had not then noticed the significance of this particular item. In its general outline the bowl approaches 14*c*.

that some of the most recurrent decorative elements that occur on the painted pottery of these Knossian tombs are derived from metal-work originals.

In some cases indeed we have good reason for presupposing prototypes in



Fig. 114. Painted clay stirrup-vases from graves of Zafer Papoura.

metal of types which have not hitherto come to light. This is particularly true of the stirrup-vases or false-necked amphoras. The occurrence of early vessels of this class at Gournia and Hagia Triada, as well as fragmentary remains of such

from the earlier stratum of the Palace at Knossos, has now shown that as a ceramic type the vase with the closed spout above as well as the open one by its side goes back to the First Late-Minoan Period and even to the close of the preceding Middle Minoan Period. On the other hand, at Knossos and elsewhere during the very flourishing Palace Period that succeeds Late-Minoan II., clay vessels of this form are almost wholly wanting,^a though the type itself occurs in the clay inventories of the Knossian Palace. On the other hand, in the following age of comparative decadence (Late-Minoan III.), such vessels became common.

To what then is this apparent break in continuity owing? It may be reasonably inferred that it is due to the fact that during the flourishing period in question stirrup-vases, as indeed we know from their delineations on clay tablets, existed in the Palace, but that they were of metal, and their non-appearance, therefore, is due to the same causes that have led to the general absence of metal objects among the remains found in the building.

The evidence supplied by the present cemetery must be taken to substantiate this view. In the graves of Zafer Papoura, as generally in contemporary interments, clay stirrup-vases are of frequent occurrence.

(See fig. 114.) But the finest of these, the upper part of which is shown in fig. 115, and of which a profile view is given in fig. 83 above, displays decorative features of a non-ceramic class and undoubtedly taken over from metal work. The beautiful foliate ornament round the shoulders is identical with that of the *repoussé* border of one of the bronze bowls of the Palace hoard of Knossos. (See



Fig. 115. Upper part of painted stirrup-vase from Shaft-Grave (No. 68).

^a A single example of a painted clay vessel of this kind of Late Palace Style was found in the Royal Villa. *B. S. A.* 1903.

fig. 116.) In that case the borders of the foliate relief that surrounds the upper part of the rim of the vessel are repeated round the outer border in a triple layer. It becomes apparent that this exquisite repetition of the outer edge of the leaves in metal chasing like that of the bronze bowl has supplied the starting point for the painted decoration of the whole upper body of the stirrup-vase before us with its succession of waved lines. Examples of similar decoration will be seen on the painted jars from the royal tomb at Isopata.^a

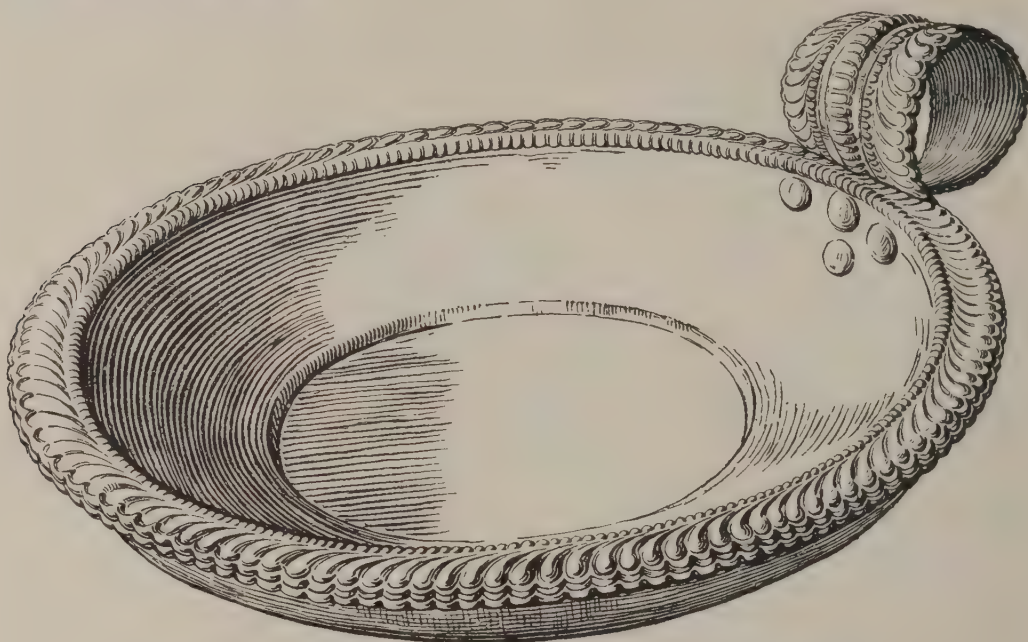


Fig. 116. Bronze bason from hoard found in the N.W. building of the Palace site at Knossos.

The small 8-shaped shield which is seen in relief on the upper field of this stirrup-vase is also appropriate to metal-work, witness that applied as a rivet-head to the fragment of the silver vessel with the siege scene from the Fourth Shaft-Grave at Mycenae.^b The other decorative elements of this fine vase, such as the rosettes and trefoils, recur on painted vessels of the Palace Style.

Other stirrup-vases from the Knossian graves, such as the exceptionally large vessels 55*d* and 51*a*, show a variant form of the same foliate design, in which two lines of attenuated leaves spring from a central stem. This fuller

^a See below, fig. 142.

^b 'Eφ. 'Aρχ. 1891, pl. ii. 2, etc.

form of the design is again well represented on the handle of the bronze bason from the Palace hoard (fig. 116), as well as on the gold handle of what seems to have been a similar vessel from the Fifth Shaft-Grave at Mycenae.^a



Fig. 117. Painted vessels of various forms from graves of Zafer Papoura.

Foliate bands in a more decadent stage, but none the less pointing to proto-

^a Schliemann, *Mycenae*, 320, fig. 482, 483. Schliemann's Grave I.

types in metal work, are found on a series of painted vessels from the Zafer Papoura graves. (See fig. 117.) In 6a and 12a we see this motive applied to the shoulders of the common class of three-handled Minoan amphoras; in 64a to a high-beaked one-handled vase; in 76f to a small spouted jug; and other examples



Fig. 118. Clay vessels of various forms from graves of Zafer Papoura.

might be cited. In the last stage of degeneration these significant foliate bands are reduced to mere rows of slightly curved lines, the pedigree of which, however, can still be clearly traced by means of the intermediate forms. Such decadent

types still preserve the distant echo of the great days of the Palace at Knossos, when vessels of bronze or of more precious metals were in ordinary use among its denizens.

The pedestalled cups with one or two handles, like fig. 118, 67*h* and 7*f*, which make their first appearance about this time, must also be regarded as clay substitutes for metal vessels of the same types. A bronze version of the two-handled shape has already been seen in 14*n*, and the silver cup with one handle anticipating the other variety is described below among the contents of the royal tomb at Isopata. It seems possible that the curious dark varnish with which 7*f*, 66*h*, and other cups of the same class had been coated may have been intended to produce the illusion of metal work for funereal show. The brilliant blue and red colouring on some other cups and bowls, which was not of a permanent nature, also seems to represent a striving after non-ceramic models.

Other designs on the vases from the present cemetery show the tradition of one or other motive of the Palace Style of ceramic decoration in a more or less decadent stage.^a The vandyking with dotted intervals round the base of 76*d* is a debased version of what may be called the wave and star ornament, very characteristic of the vases and painted stucco of the Later Palace at Knossos.^b The rosettes and tendrils of 55*d* (fig. 114), 62*b* (fig. 117), and 51*a* (fig. 114), and the other conventionalised sprays, such as 99*n*, 54*a* (fig. 114), and 64*b*, find their parallels in the same quarter. It is further observable that though the purely geometric elements so conspicuous on the present ceramic class are for the most part absent from the fine vases of the later Palace Style they already play a considerable part in the painted plaster decoration. The lozenges, zigzags, the scale and basket work motives, and other features visible in the decoration of the Zafer Papoura vessels, are all anticipated in the Palace frescoes.^c

In the general character of its decoration the later class of pottery found in this cemetery much recalls a good deal of that brought to light by the excavations

^a For the influence of the Palace Style of Knossos on the later pottery of Crete and the Ægean area, see especially Mackenzie, *The Pottery of Knossos*, 199, 200. (I. H. S. xxiii.)

^b An example of this round the upper rim of a large painted jar from the Isopata tomb will be seen below, fig. 142*b*. For this as a fresco decoration see Theodore Fyfe, "Painted Plaster Decoration at Knossos," *Journal R. I. B. A.* x. 167, figs. 64-67, there described as "tooth ornament." It recurs on the hearth of the Megaron of Mycenae. It is also a favourite conventional way of rendering feathers on the wings of sphinxes or griffins.

^c See Fyfe, *op. cit.* 129, figs. 70-80.

of the British School at Palaikastro in East Crete.^a Mr. R. M. Dawkins^b has rightly insisted on "the slightly mechanical scheme of decoration in which the field is parcelled out by a rigidly disposed system of lines and thickly covered with patterns, very commonly with rows of leaves set closely together." He characterises this class of ceramic decoration as the "close style." It betrays indeed many anticipations of the succeeding Geometrical class.

It must at the same time be observed that the apparent decadence observable is this "close style," as compared with the finer fabrics of the later Palace of Knossos, does not necessarily imply any great discrepancy of date. The quasi-Geometrical features here observable were, as has been pointed out, in many cases anticipated by the painted wall decoration of the Palace itself. The ceramic style that we have here to deal with in fact represents that of the period immediately succeeding the fall of Knossian Palace, and the nearest chronological equations at hand point to the close of the Eighteenth or the early part of the Nineteenth Dynasty. Thus the conventionalised papyrus sprays^c and closely akin scale pattern^d of some of these vessels, and of the painted *larnax* (fig. 103), show a considerable resemblance to those on the Ægean sherds from the Palace of Akhanaten at Tell-el-Amarna, dating from the beginning of the early years of the fourteenth century B.C., and to others from Kahun belonging to the close of the Eighteenth or beginning of the Nineteenth Dynasty. In the present cemetery examples of these conventionalised sprays, for which the papyrus of Egyptian art seems to have supplied the original suggestion, occurred on vessels from Grave No. 99, which also contained an Egyptian scarab of a class typical of the latest Eighteenth Dynasty period.

^a Some of the parallels are very close. The festoon pattern of 16 may be compared with that of *B. S. A.* ix. p. 317, fig. 16 (2). It is itself of Palace origin. The combination of an attenuated foliate band with one of chevrons seen in the three-handled amphora 6a, is repeated in the Palaikastro jug *loc. cit.* fig. 16 (1). ^b *B. S. A.* ix. 316.

^c *E.g.* 64b, 70c, and the end of the *larnax* from Tomb 100. Compare the types given by Petrie, *Tell-el-Amarna*, pl. xxvii. 33, pl. xxviii. 63, pl. xxx. 125, 126. For the rayed shoots as seen on some of the Tell-el-Amarna fragments (pl. xxvii. 35, 36, xxviii. 67) compare those on the side of the *larnax*. Certain varieties of the Tell-el-Amarna sprays do not occur in the present cemetery. On the other hand the spray on the stirrup-vase 54a is not found on the Egyptian site: the parallel here shows a certain contemporaneity, but not identity of fabric. The reserved, light on dark, sprays of some of the Tell-el-Amarna fragments (pl. xxvii. 27-34) are remarkable examples of adherence to an archaic tradition.

^d *E.g.* 5a, 21a. This is really a truncated version of the former motive. Compare 5a and *Tell-el-Amarna*, pl. xxviii. 59, pl. xxix. 73.

It is to be observed that the more or less contemporary Ægean vessels from these Egyptian sites, though showing many points of correspondence both in form and in decorative motives with those of the Knossian cemetery, leave certain elements practically untouched. Beneath the shadow of the Cretan palaces it was natural that the wealth in vases of bronze or more precious metals should react on the ceramic types. But the pottery of the Ægean traders or workmen in the Nile Valley would be humbler in its associations, and decorative designs like the foliate bands derived from metal work have left very little trace on the fragments found at Tell-el-Amarna^a or Kahun.

One remarkable negative phenomenon indeed is common to both of these contemporary groups. At an earlier date, answering to the middle period of the Later Palace of Knossos, and the epoch of transition between the first and second Late-Minoan styles, sea creatures, notably the triton shell and the octopus, formed a very prominent feature in the painted designs of vases. The incursion of architectonic and exotic motives taken from the actual decoration of the royal halls put these marine subjects somewhat in the background in the days of the advanced Palace Style. In the next age, as we see in the vases before us, we still find traces of the Nilotic plant forms and other elements of the Palace decoration, and, side by side with these, imitations of metal shapes and chasings. But the marine repertory seems to be hardly drawn on. At any rate, on the vases of Zafer Papoura we seek in vain the trace either of sepia or conch-shell.

That these marine creatures still continued to be reproduced is nevertheless clear from their reappearance in decorative and decadent shapes at Knossos itself, as well as on other Cretan sites, in the very latest Minoan Age.

Examples of this ultimate evolution may be seen on the vases from the Milatos Tomb. The argonaut or the conch-shell have degenerated into the corkscrew-like twists of fig. 106J. On fig. 105A the octopus has become a mere symmetrical centre to a continuous series of curves. Among the remains of the later squatters on the Palace site at Knossos octopus patterns of the above class are specially conspicuous. These remote and often hardly recognisable descendants of the naturalistic delineations of marine life that mark the great Minoan Age are characteristic of the most widely diffused class of Late Mycenæan ware, and

^a Only one fragment figured by Petrie in his *Tell-el-Amarna*, belonging to a globular flask (pl. xxix. no number), shows the foliate ornament in a very degenerate stage. Compare the flask from Palaikastro with similar ornament, Dawkins, *B. S. A.* ix. 306 and fig. 15, who notes the resemblance to the Tell-el-Amarna fragment.

occur outside Crete, not only on the mainland sites, but in Rhodes, Cyprus, and among the Philistine remains of the Canaanite littoral.^a

At Knossos some of the intermediate stages in the downward progress both of triton shell and octopus may be observed,^b but if we may judge from the contents of the Zafer Papoura cemetery, they had become almost a vanishing quantity by the date of the destruction of the Palace and during the immediately succeeding period. The same phenomenon seems to meet us at Palaikastro, at Phaestos, and again, on the Egyptian side, at Tell-el-Amarna and Kahun. It would be interesting to know to what influence the intensive reappearance of such marine motives under their developed aspect was due. What seems clear is that during the very last Minoan Age which immediately precedes the triumph of the Geometrical style and of the use of iron for arms and implements, these marine types come once more to the fore, while those derived from metal work sink into the background. In many cases, moreover, as at Milatos,^c they are associated with a new form of bell-shaped amphora with two handles, which survives into the Geometrical Period. In Tomb B at Mulianà, in East Crete, occurred a stirrup-vase with a very late and florid development of the octopus design in company with bronze swords of the late Continental type, the source of which must be sought in the Balkan Peninsula or Italy.

The general conclusion, then, to which we are led by a study of the pottery of the present cemetery is that on the whole it occupies a more or less intermediate position between the latest Palace Style and that of the transitional period when iron was coming into use. A few exceptional examples like the stirrup-vase shown in fig. 115 above, with its fine suggestions of chased metal-work, may well be included within the limits of the Palace Period. But the abundance of the stirrup-vase or *pseudamphora* type must itself be regarded as a late characteristic. Another negative phenomenon is also noteworthy. No single specimen was brought to light of a characteristic type of flat vessel with three handles,^d imitated apparently from examples in alabaster, such as occurred in the Room of the

^a Mr. Curelly informs me that the corkscrew-like degeneration of the triton shell occurs on the painted Ægean vase-fragment from Gezer.

^b For the triton, see Hogarth, *B. S. A.* vi. 74, fig. 16, and *J. H. S.* ix. 334, fig. 1b, on a Late Palace fragment, and my Report, *Knossos*, 1903, *B. S. A.* ix. p. 115, fig. 71. In the latter case the shells, perhaps rather *argo argonauta* than triton, are worked into a triple figure. Other early developments of the same shell occurred on vases from house floors at Knossos.

^c Xanthoudides, *Εφ. 'Αρχ.* 1904, pl. i. pp. 43, 44.

^d Compare a vase of this type from Egypt with marine decoration of the Second Late-Minoan Period. Perrot et Chipiez, *Grèce Primitive*, 925, fig. 485.

Throne.^a Yet vases of this squat aryballos type, connected either by their style of decoration or their associations with Late Palace fabrics, occurred in a small chamber-tomb near the Royal Tomb at Isopata,^b to be described below, and in another grave explored by Mr. Hogarth. The absence, again, of the finer and freer class of conventional plant designs on the vases from the Zafer Papoura graves is also very significant. We see them here replaced by derivative patterns which, when not absolutely decadent, show mechanical repetitions quite devoid of creative spirit.^c

If we now glance at the jewelry and personal ornaments found in the Zafer Papoura graves (see fig. 119), we shall detect much the same evidence of a period of stationary well-being followed by slow decline that meets us in the case of the bronzes and pottery. Engraved gems or seal-stones are rare; specimens, like fig. 61 from Grave 36, still show a bold style of engraving, but the other intaglios found are of more careless or decadent execution, notably that of a couchant lion, shown in 99*a* (3), fig. 101. The only gold ring with an intaglio design on the bezel is that from Grave 7, but in this case the engraving was not, as in the finer class of Minoan and Mycenæan signet-rings, in the gold of the bezel, but rather in the bronze backing, into which a comparatively thin gold plating was afterwards pressed. This, too, conveys the idea of careless execution.

The general impression produced by the gold necklaces shown in fig. 119 is that of a somewhat banal and conventional prettiness when compared with the greater variety and finer style of the jewelry of the preceding age, as exemplified in the shaft-graves of Mycenæ or in the fleur-de-lys collar shown in the coloured relief of a royal personage from the Palace at Knossos.^d

The stellate flowers 66*a*, the bivalve shell 75*a*, and the ornament on the necklaces from Graves 7 and 36, all belong to a class of sepulchral jewelry very widely diffused in the Ægean world in the latest Minoan and Mycenæan period. The other relics found with 36*h*, the relief of which is finer than 7*a*, imply that

^a A. J. Evans, *Report, Knossos*, 1900, p. 41. The prototypes of these may be sought in a baggy form of Egyptian alabaster vases, characteristic of the Middle Empire, which survives into the early part of the Eighteenth Dynasty.

^b Two specimens occurred in this grave in a very fragmentary state. They were decorated with a kind of rockwork design, typical of the Late-Minoan II. class. Fragments of a small three-handled amphora with plant designs of the Palace Style were found in the same tomb.

^c *B. S. A.* vi. 82, described as a large squat aryballos in unglazed greenish ware with black spiraliform ornament.

^d *Report, Knossos*, 1901, p. 16, fig. 6.

this necklace goes back to within the limits of the Palace Period at Knossos. The embossed decoration of the beads forming the two latter necklaces has been shown above to originate in a duplicated version of an argonaut (*argo argonauta*) with its



Fig. 119. Jewelry from the graves of Zafer Papoura.

characteristic tentacles, supposed to serve the purpose of a sail, a favourite subject of the earlier phase of Late Minoan Art. But the geometrically balanced pattern

that we see here, with its suggestions of octopus, cannot compare for beauty with the free naturalistic rendering of the argonaut itself as seen for instance on the small gold plates found in a tomb of the Lower Town of Mycenae which contained imported Minoan vases of the finest Palace Style.^a

It must nevertheless be concluded from the character of the other relics found in the same grave that the necklace 36*k* comes at least within the limits of the Palace Period at Knossos. Its embossed work indeed is of finer and bolder execution than that of 7*c*, which must belong to a somewhat later date. An interesting chronological equation, moreover, tending to carry back the date of necklaces of this period to the borders of the Second and Third Late Minoan Periods, is supplied by the contents of another tomb (No. 8) of the Lower Town of Mycenae.^b Gold beads of a necklace,^c closely resembling those of 7*c*, were found in this tomb in association with a bronze safety-pin^d of the earliest fiddle-bow type. This earliest fibula type has not as yet been found in a Cretan grave,^e but the synchronism established by the gold beads shows that it was already in use on the mainland of Greece at a time roughly corresponding with the conclusion of the Palace Period at Knossos, which can hardly be brought down later than the close of the fifteenth century B.C. It belongs to the same approximate date as the painted pottery with motives derived from metal work.

It has already been pointed out that in the very latest Minoan Bronze Age the class of ceramic decoration represented in the Zafer Papoura Cemetery was to a large extent displaced at Knossos and elsewhere by a reincursion of types derived from marine subjects. The tomb of Milatos, described above, exhibits this later ceramic style, and it is therefore important to observe that a decorative motive on a stirrup-vase from this tomb recurs in an identical form among a group of vessels belonging to the very borders of the Iron Age found at Mulianà,^f in East Crete, in association with a fibula in the form of an arched bow with two knobs, one above the spring and the other above the stilt of the catch-plate,^g

^a See Bosanquet, *J. H. S.* xxiv. (1904), 324, fig. 1*a*.

^b Tsountas, 'Εφ. 'Αρχ. 1888, pp. 138, 139, and pl. ix. 2, 4, pl. x. 2, 3, 4.

^c *Op. cit.* pl. ix. 4.

^d *Op. cit.* pl. ix. 2.

^e Small examples of this type have been found in the Dictæan Cave. One is published by Hogarth, *B. S. A.* vi. 112, fig. 45. Another obtained by me in 1896 is in the Ashmolean Museum.

^f S. Xanthoudides, 'Αφ. 'Ερχ. 1904, p. 27, fig. 6 (the last vase but one to the right).

^g *Op. cit.* 29, fig. 7, and p. 31. The fibula belonged to the Bronze Age interment of the tomb.

representing a later development of the fiddle-bow. This type in Crete and elsewhere marks the very close of the Minoan and Mycenæan Bronze Age,^a and survives into the earliest Iron Age.^b

There can be little doubt that the safety-pin reached Crete from a mainland source. The non-occurrence of the fiddle-bow type and other closely allied forms in the Knossian Cemetery when contrasted with their occasional occurrence in the contemporary graves of the Lower Town of Mycenæ is in itself a negative phenomenon of some importance. Coupled with the absence of the Northern form of sword we may find here a distinct indication that during the period covered by the Zafer Papoura graves there could as yet have been no great amount of intrusive influence from the mainland side.

The appearance in this cemetery of three distinct types of interment, the shaft-graves, the chamber-tombs, and the pit-caves, might at first sight seem an indication of the state of things described in the Homeric lines,^c and be taken to imply that Crete was already a land of mingled races and tongues, where Achæans, Dorians, and Pelasgians had their seats beside the older inhabitants. The most recent craniological researches have indeed tended to show that from a very remote period, as might well be inferred *à priori* from the geographical position of the island, Anatolian and South European, perhaps even Libyan, elements had here blended. The variant forms of sepulture brought to light in the present cemetery are the natural outcome of different topographical and geological conditions, and it is always possible therefore that they may be ultimately referred to differences of ethnic extraction. But the uniform character of the great Minoan civilisation, as traceable throughout the island, had no doubt done much to weld together such heterogeneous elements as had existed *ab antiquo*. The evidence of the prehistoric script, so far as its records extend throughout Central and Eastern Crete, points to a certain unity of language. Down at least to the date of the final destruction of the Palace of Knossos there seems to be no room in Crete for warring elements of recent intrusion from mainland Greece.

^a Two gold fibulas were of the same type, accompanied by a very late stirrup-vase in a tomb at Old Paphos. (*Journ. Anthropol. Inst.* xxx. 104.) Similar brooches are found in chamber-tombs of the Late Bronze Age or the transitional period when iron was coming into use in Sicily and Italy. (Colini, *Bull. di Pal.* 1905, pp. 45, 46, and p. 58, fig. 155.)

^b A fibula much resembling this with the knobs somewhat modified was found by Miss Boyd in a tomb at Kavousi, belonging to the Latest Bronze Age of Crete. (*American Journal of Archaeology*, v. (1901), 136, fig. 2.) In a tomb at Assarlik, again, in Caria, the type occurred with Sub-Mycenæan pottery and iron weapons. *J. H. S.* viii. 74, fig. 17.

^c *Od.* xix. 172 *seqq.*

That a part of the interments of the Zafer Papoura necropolis came within the limit of the last period of the Palace at Knossos has been sufficiently demonstrated. If then it could be made out that the objects which attained to the Palace level of art were all from one class of graves the other two classes of sepulture might be regarded as due to the presence of later settlers of extraneous origin. But such is by no means the case. On the contrary, the whole of the evidence at our disposal points to the fact that all three classes of interments co-existed from the earliest days of the cemetery. The same types of objects occur in fact indifferently in shaft-graves, chamber-tombs, and pit-caves alike. The finest painted vessel, the stirrup-vase namely, 68*b* (fig. 83), with decoration reproducing the purest style of metal decoration of the Later Palace, was found in a shaft-grave overlying the entrance and *dromos* of a chamber-tomb which must therefore have been anterior to it. Good examples of similar vases, 55*d* and 51*a*, occurred in graves of the pit-cave class. The great hoard of bronze vessels, some repeating Palace forms, was brought to light from the largest chamber-tomb (No. 14), while other bronze vessels of the same class and the gold-plated sword with its naturalistic engravings of wild goats and lions came from a shaft-grave (No. 36). The same parallelism runs through the whole series of interments.

In truth, the high interest of the Zafer Papoura cemetery lies in the fact that throughout its whole duration it attests a striking continuity of local traditions. To whatever circumstances was due the great overthrow of the later Palace it did not bring with it any real break in the course of the Late-Minoan culture. The models supplied by the great Palace Style of wall and vase painting, of metal work and gem engraving, continued to be followed.

A period of immobility in art is succeeded by one of gradual decadence, but the course of Minoan civilisation, whether still along the level or on the slight downward incline, was still uninterrupted in the main.

It must at the same time be remarked that in the case of the tombs explored the lower limit reached is somewhat clearly defined. It has already been noted that the ceramic style characteristic of the close of the Late Minoan Period, with its hardly recognizable degenerations of triton shells and symmetrically arranged octopus coils, is as yet non-apparent. Both the Continental type of sword, which gave rise to those so widely diffused in the Early Iron Age, and the Late Mycenæan class with the flange carried round the top of the hilt, are as yet unrepresented.^a The bow fibula characteristic of the latest Bronze Age in Crete and of the transi-

^a The dagger, however, 95*e*, exemplifies this type of hilt.

tional period when iron was coming into use is also absent, and, as fibulas were at that time common in the island, its absence proves more than that of the earlier fiddle-bow type. Of the beginning of the use of iron itself there is no trace in the present cemetery: arms and implements are alike of bronze. Glass, it will be seen, is found in these graves both in the vase form and as the material for beads, but the non-appearance of impressed glass ornaments such as are current in the Late Mycenæan graves elsewhere, and were present in the chamber-tomb at Milatos, must be taken as a sign of a comparatively early date. It will be remembered that such do not occur in the shaft-graves at Mycenæ.

In contradistinction to the chamber-tombs explored by Mr. Hogarth on the western side of the neighbouring ridge, none of the graves of Zafer Papoura had been cleared out in order to be used again for sepulchral purposes in the Geometrical period. Neither have we here, what seems undoubtedly to have been the case with one of the chamber-tombs at Mulianà in East Crete,^a any example of the continued use of a grave going down to the Earliest Iron Age. In Grave A at Mulianà the bronze swords and other relics that accompanied the earlier interments had not, as would have been natural had they met the eyes of alien intruders, been plundered or cleared out. They had been simply placed on one side in order to make room for the funeral furniture of some later scion of the same family, so that we have here the interesting spectacle of the succession of corpse burial by cremation and of iron weapons by bronze, apparently without any break in the indigenous stock. The accompanying vases, moreover, a two-handled bell-shaped amphora and a kind of *pyxis*, still represent the old tradition both in form and decoration, except that, side by side with Late-Minoan ornament, figures of a horseman and of a hunter of Cretan wild goats are introduced in a Geometrical style, recalling that of the Dipylon. We have here the clearest evidence yet brought to light of a Sub-Minoan Early Iron Age^b parallel to that of

^a 'Εφ. 'Αρχ. 1904, p. 22 *seqq.* For the Mulianà tombs see above.

^b A close parallel to these transitional tomb-groups is also supplied by the contents of a built *tholos* tomb found at Erganos, not far from the site of Lyttos, and described by Halbherr (*American Journ. of Archaeology*, 1901, p. 271 *seqq.* and pl. vi.). In this case, side by side with the remains of crouched skeletons and late stirrup-vases closely resembling the examples described above, was a cinerary urn decorated in a style in which Late Minoan elements still preponderate, though there is some infusion of the Geometrical. No metal objects were found in this tomb, but it is safe to say that the cremated remains belong to the beginning of the Iron Age. For the abundant traces of the survival of Minoan (Mycenæan) elements even in the developed Geometrical style of Crete see especially Mariani, *American Journal of Archaeology*, 1901, p. 305 *seqq.*; Orsi, *op. cit.* 1897, p. 252 *seqq.*;

the Sub-Mycenæan tombs of Salamis, of Assarlik in Caria, and the analogous phenomena in Cyprus.

In the graves explored at Zafer Papoura the lowest limit of the Minoan Bronze Age is not reached, and we have no trace of any such transition to a Sub-Minoan Iron Age. But the evidences of such a stage elsewhere on the site of Knossos are fast accumulating.

Wied, *Nachleben mykenischer Ornamente* (Mitth. d. k. deutschen arch. Inst. Athens, 1897, p. 234 *seqq.*). Harriet A. Boyd, *Excavations at Kavousi in 1900* (*American Journal of Archaeology*, 1901, p. 146 *seqq.*). At Knossos itself, as I hope to show on another occasion, this persistence of the older elements is very well marked.

II.—THE ROYAL TOMB OF ISOPATA.

§ 1. *Discovery and Excavation of the Tomb.*

The range of hills on the eastern slope of which the cemetery of Zafèr Papoura came to light, and of which the Palace hill itself is a southern spur, extends northwards for about two miles beyond this point. Its further promontory in this direction is surmounted by a narrow flat, locally known as *ῥσὰ ῥσώπατα*, or, in its fuller Romaic form, *εἰς τὰ ἰσώπατα τοῦ Ἀγίου Νικολάου*. On the northernmost edge of this plateau, overlooking the sea about one and a half mile distant, and the walls of Candia, as the crow flies not much further away, was a pit from which for the last twenty years the peasant owner of the soil had been in the habit of quarrying large worked blocks. The existence of this pit and the possibility that some ruined tomb was to be sought here had been known to us for some time, but it was only during the campaign of 1904 that we were able to extend our investigations on that side.

Visiting the spot with Dr. Mackenzie, I found in the lower part of the pit some well-cut limestone blocks with one face splayed downwards, a characteristic feature of buildings constructed on the principle of the Cyclopean or horizontal arch. In view of this suggestive discovery recourse was at once had to exploratory excavation, which made clear the fact that we had to deal with a considerable monument of Minoan date. We were prepared to find a circular tomb of the bee-hive class, but it soon became apparent that the principal part of the present structure was a large quadrangular chamber.

Unfortunately it was not only ruined, but the greater part of the upper masonry had been carried off for building purposes. Inquiries among the peasants elicited the fact that the small church of Hagios Nikolaos on the opposite hill to the west had been largely built of materials obtained from this convenient quarry, the blocks being cut smaller for the purpose. The owner, it appeared, in the course of this clearance work had found a number of skulls and some painted pots, which he had taken to his house. House and vases alike, however, had been destroyed during the recent revolution, and though this handy quarry had helped the owner to rebuild his house the pottery was irrecoverable. It



Fig. 120. VIEW OF INTERIOR OF THE ROYAL TOMB AT ISOPATA, LOOKING EAST.

appeared, however, from his description that one at least of the vessels was a stirrup-vase. The building itself was supposed by the country people to have been a tower (*πύργος*).

Owing to the great masses of fallen blocks that still encumbered the area, and the considerable size of the monument, it took sixty men a fortnight's work to clear out the interior of the tomb and its approach. The principal chamber proved to measure on the floor level about 8 metres from east to west by 6·50 metres from north to south. The north-west corner of the walls was wanting, but the cutting in the soft rock showed the original form. The southern section of the east or front wall was the best preserved, consisting of nine courses, and rising to a height of 3·60 metres. (Fig. 120, Plate XCII. and Plate XCV. *a*.)

The front and back walls of the chamber rose perpendicularly, but, as will be seen from the cross section given in Plate XCV. *a*, the two side walls started from the floor level with a slight inward slope obtained by means of the splayed face of the flat superposed blocks. In the back wall of the chamber was a square recess or niche going back 1·23 metre to the face of the rock cutting. Only the lower part of this was preserved, but it no doubt resembled in construction two other niches of about the same size found in the fore-hall of the tomb. Like these, moreover, it seems to have been used for sepulchral purposes in the latest Minoan Period, since a skull and two small vessels, one of them according to its description a stirrup-vase, were found in the upper part by the peasants who removed its masonry.

The floor of the chamber was formed of a white indurated material, in which, near the north-east corner, subsequent researches brought out an oblong cutting 2·80 metres long by 1·27 metres wide. On clearing out this to a depth of about a third of a metre, the rough covering slabs of a sepulchral stone cist, recalling the "kaselles" of the Palace Magazines, were brought to light. The cist will be found further described below, but the rough slabs above it were evidently not its original covering.

The front wall of the chamber showed a blocked archway^a constructed on the same horizontal system as the side walls of the chamber. This arch led to a narrow fore-hall 6·75 metres in length and 1·58 metre broad, built on to the main chamber at a slightly oblique angle, on either side of which was a niche

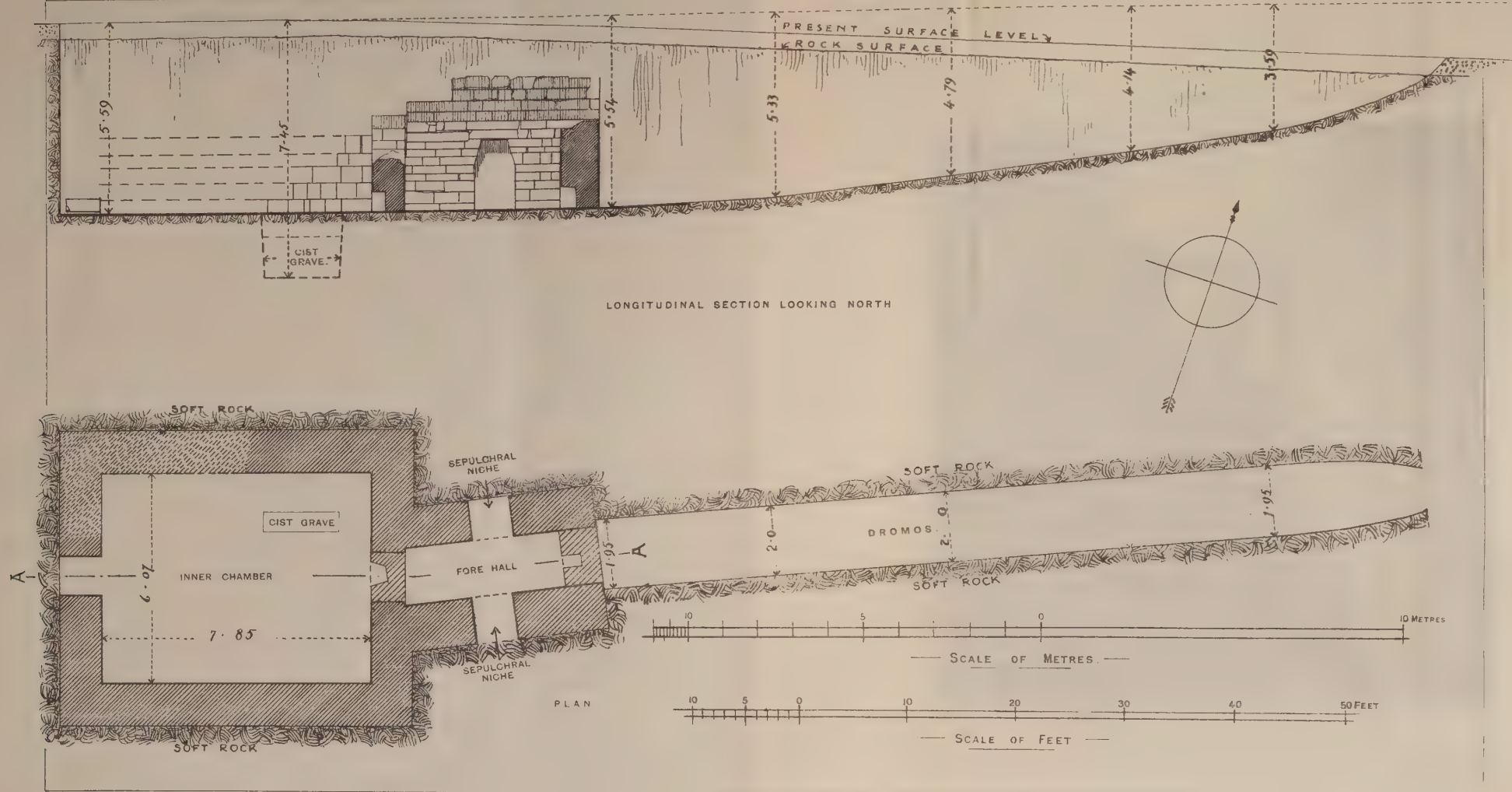
^a At the base of the wall that blocked the entrance, on the inner side, was a kind of miniature niche. A similar feature occurred on the inner side of the blocking of the fore-hall. The object of these small niches is uncertain. They may have contained food offerings.

resembling in plan that at the back of the main chamber. The recesses in this case, however, were completely preserved, showing a horizontally arched vaulting

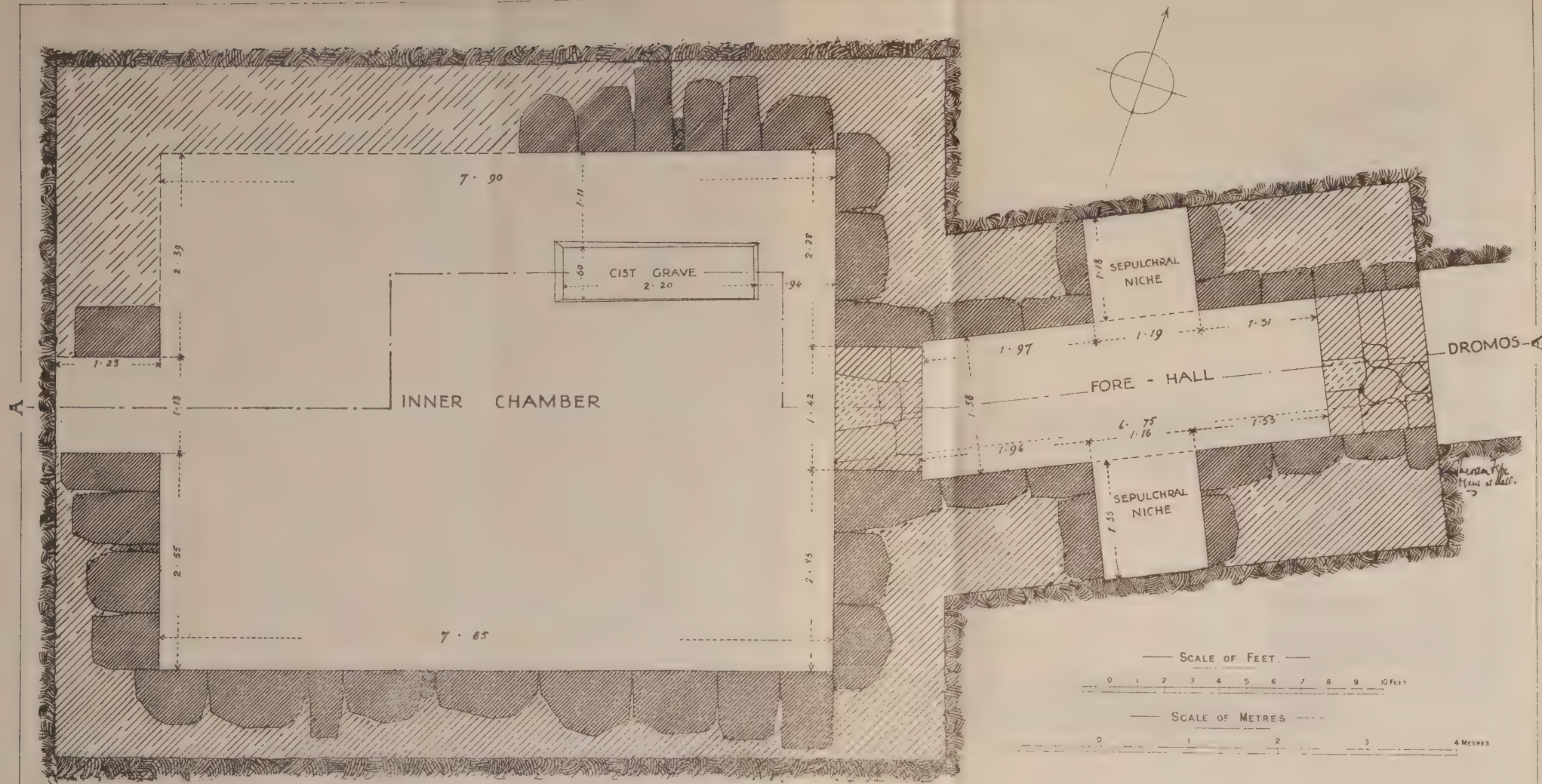


Fig. 121. View of the *dromos* looking west, towards the entrance of the fore-hall.

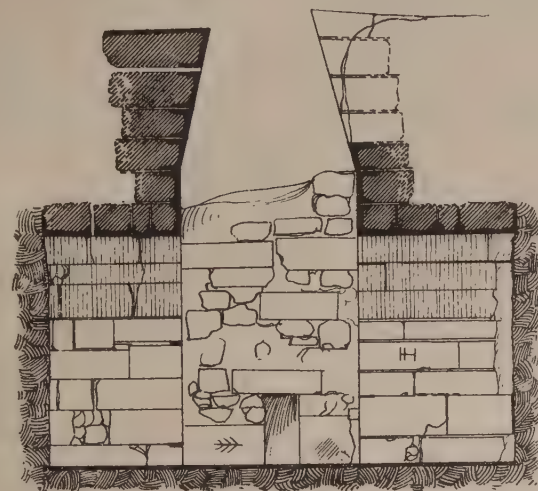
above with a flat lintel. (See Plates XCVI. XCVII.) They were, moreover, blocked by a rough walling. Two courses above the top lines of these niches the



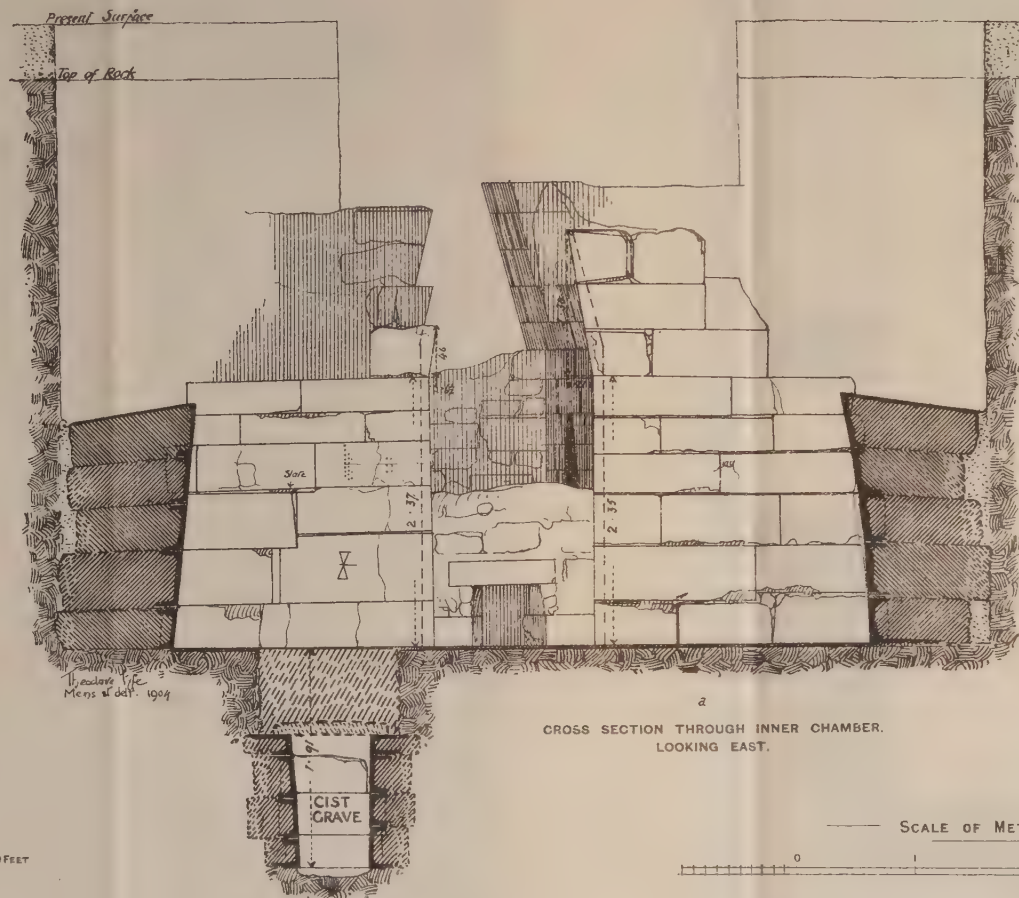
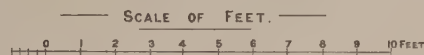
THE ROYAL TOMB AT ISOPATA—GENERAL PLAN AND LONGITUDINAL SECTION. LOOKING NORTH



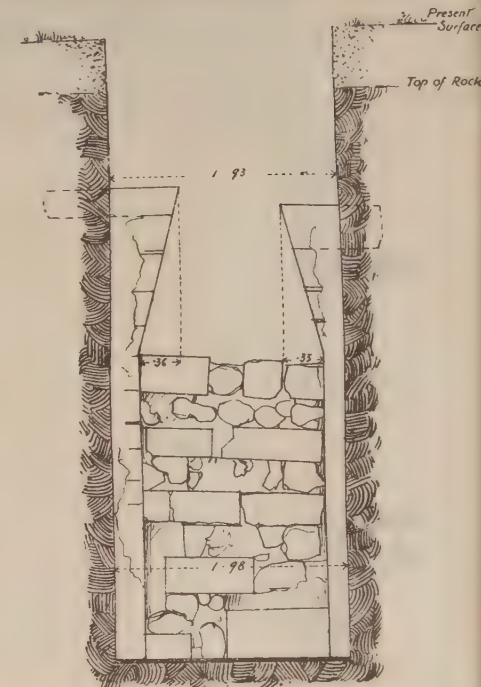
THE ROYAL TOMB AT ISOPATA. GROUND PLAN OF INNER CHAMBER AND FORE-HALL.



b
SECTION THROUGH FORE-HALL.
INCLUDING NICHES.

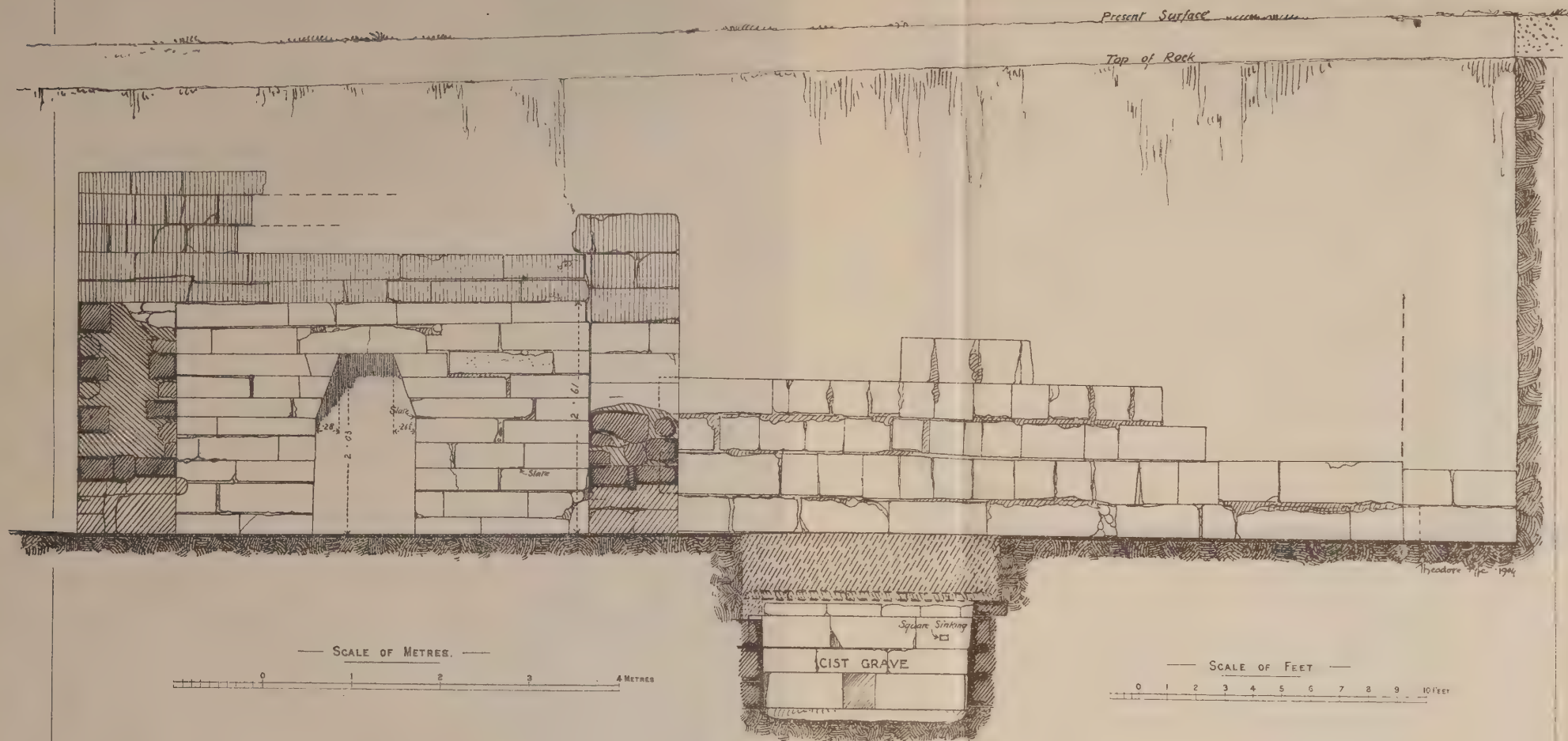


a
CROSS SECTION THROUGH INNER CHAMBER.
LOOKING EAST.



c
SECTION OF DROMOS
BY DOOR OF FORE-HALL

THE ROYAL TOMB AT ISOPATA.—CROSS SECTIONS OF (a) INNER CHAMBER, (b) FORE-HALL, and (c) DROMOS.



THE ROYAL TOMB AT ISOPATA.—LONGITUDINAL SECTION OF INNER CHAMBER, LOOKING SOUTH.

side walls of the fore-hall itself sloped inwards in the same manner as the arched doorway communicating with the principal chamber. As many as fourteen courses were preserved in position in this part.

This arched fore-hall had been blocked by a thick walling at its eastern end, beyond which was a spacious passage-way or *dromos* 24 metres in length, cut out of the soft rock. (Fig. 121.) This passage, the sides of which were nearly perpendicular, was throughout the greater part of its length 2 metres wide, but narrowed near its entrance in a gradual curve. Immediately outside the blocked arch of the fore-hall the floor level of the *dromos* was about 5 metres below the level of the surface of the rock. Throughout its course, however, there was a gradual rise, considerably accentuated near its entrance, which corresponded in level with the rock surface at this point.

From the considerable size of the monument as compared with the tombs discovered in the neighbouring cemetery, its commanding position and the importance of some of the objects found within it, it may fairly be regarded as a Royal Tomb.

For the details of this imposing monument I must refer to the careful plans and elevations prepared by Mr. Theodore Fyfe (Plates XCIII.-XCVII.), who has also supplied a note on the construction, and on the manner in which the vaulting of the principal chamber was probably completed. (See fig. 145.)

From the analogy of the best examples of rock-cut chamber-tombs, such as those of Zafer Papoura, the rule will be found to hold good that the height of the chamber approximates to one of its inner lengths.^a In the same way the inner diameter and height of the great *tholos* chambers of mainland Greece will be also found roughly to correspond. In the case of the present chamber, however, the very gradual inner slope of the lowest section of the two sides, if continued, would indicate an altogether disproportionate height. There is therefore good warrant for supposing that this inward slope must have increased as the walls ascended. In his restored section Mr. Fyfe has assumed an extension of the existing curve in geometrical progression which brings the apex of the vault to a height of about 8 metres, approximately answering to the length of its sides.

The pit in which the principal chamber lay was 10.25 metres from east

^a To take some instances almost at random, Grave No. 72 has a north to south length of 1.20 metre and height 1.30 metre; No. 81, east to west, 1.40 metre, height 1.30 metre; No. 93, east to west, 1.65 metre, height 1.50 metre; No. 13, north to south, 2 metres, height 2 metres; No. 56, north to south, 1.50 metre, height 1.50 metre.

to west by 7·30 metres from north to south, with more or less upright sides, descending to a mean depth of 6 metres, or about 20 feet. Of this depth the superficial earth represented only about half a metre, the remaining 5·50 metres being cut out of the solid rock. Assuming that the level of the rock surface has not appreciably altered, it thus appears that about 3 metres of the ridge of masonry forming the summit of the sepulchral chamber would have stood out above this level. If, as is probable, this in turn was covered with earth, the site of the tomb must have been marked by a considerable mound, itself perhaps crowned by some conspicuous *stela* or monument.

The previous disturbance within the area of the tomb and the great mass of *débris* made it impossible to obtain any exact idea of the original arrangement or stratification of the objects found there. It may, however, be noted that the few Geometrical sherds brought to light, which possibly indicate a certain continuity in sepulchral tradition, occurred rather in the upper levels, and that the only relics actually found on the floor of the principal chamber belonged to a good Palace Period. Scattered about in intermediate positions were numerous fragments of vases, many of them quite rough and unpainted, belonging to the latest Minoan Period. With these were scattered human bones and some forty skulls, in a more or less crushed condition. It was observable, however, that the skulls were more *en évidence* than the bones, and they may have been set apart from them. In this case the tomb as used during the latest Minoan Age, would have been an ossuary.

Not only the fore-hall but the two arched recesses on either side of it were found largely filled with *débris* similar to that of the main chamber. Some narrow blocks in position near the top of the niches showed that they had been originally walled up, but the walling had been broken in and the interior choked with this jumbled material. Fallen blocks and rubble, with here and there bones and skulls lying in no connexion with one another, and pottery, mostly in a fragmentary state, filled two-thirds of the recesses. Above this was an infiltrated clay deposit, formed by water, about half a metre thick in places, and then a short vacant interval. In the north recess were found two skulls, a thigh bone, and fragments of very late Minoan pottery, exhibiting decadent octopus designs, and including parts of a plain pedestalled cup of the champagne-glass type (cf. fig. 118, 66*h* above). In that on the south side of fore-hall were three skulls, the uppermost of these more nearly in connexion with a group of bones than had been the case elsewhere. Beside it, moreover, was a perfect stirrup-vase, with a painted octopus design of a very late character. The exceptional preservation

of these remains was no doubt due to the fact that they rested on the top of the *débris* and were only covered by the deposit of infiltrated clay.

The stirrup-vase in question (fig. 122) presents a late decorative development of the octopus, of special chronological significance. The style and details of this design in fact altogether correspond to that of a vase of the same form found in the Cymbal-player's Tomb (B) at Mulianà in East Crete belonging to the very close of the Minoan Bronze Age, and exhibiting details which recur on vessels, one with cremated remains, from 'an interment in the fellow tomb at the same locality belonging to the earliest Iron Age. The stirrup-vase from this niche must be referred therefore to the very close of the period above described as Late-Minoan III. Some of the other vessels of which fragments were found in the opposite recess and in the inner chamber belong to a somewhat earlier class, more nearly approaching the types found in the Zafer Papoura Cemetery. Taken as a whole, however, the pottery with which the confused mass of later interments found in the Royal Tomb was associated must all be referred to the same general period, and to a time when the Palace itself was in a ruinous and only partially occupied condition.



Fig. 122. Painted stirrup-vase of late character from the south niche of the fore-hall. Height: 16.5 centimetres.

The first important finds belonging to earlier interments were made above the east end of the fore-hall. Here, at a depth of about 3 metres from the surface, came to light the greater part of a magnificent black porphyry bowl (fig. 123, S. 1 in Plate XCVIII. and fig. 124), the remaining fragments of which were subsequently discovered at a somewhat lower level.^a Near this came out a broken alabaster bowl (fig. 125, S. 11) with the greater part of another (fig. 125, S. 13), and some beads of *lapis lazuli*, together with a frog and an ape of the same material perforated for suspension (figs. 131*a*, 132). Scattered about in the neighbourhood of these, moreover, were a number of clay sealings, impressed by the same fine signet representing a bull (fig. 138). About 4 metres down near the doorway of the principal chamber was found a hooked pin of twisted gold (fig. 129), probably a hair pin. Although some of these relics had worked down to a somewhat lower level, the general lie of these finds was found to correspond with an old surface, formed of a watery deposit, and sloping down from the top of the ruined cross-wall at the opening

^a Only one small fragment is wanting.

of the *dromos* to the somewhat lower ridge of that blocking the doorway of the principal chamber. It is evident therefore that at the time when these objects were extracted by plunderers from the inner chamber the fore-hall was already largely choked by deposit, and the upper part of the cross-walls had already been broken away by earlier violators of the tomb. Probably both earlier and later robbers were in search of precious metals, and the stone objects had not been sufficiently prized for removal, though the porphyry bowl was barbarously broken up.

The great mass of finds, belonging apparently to two earlier interments, occurred on or near the floor of the principal chamber over an area extending from its centre towards the south wall. The lower part of a vase of Late Palace

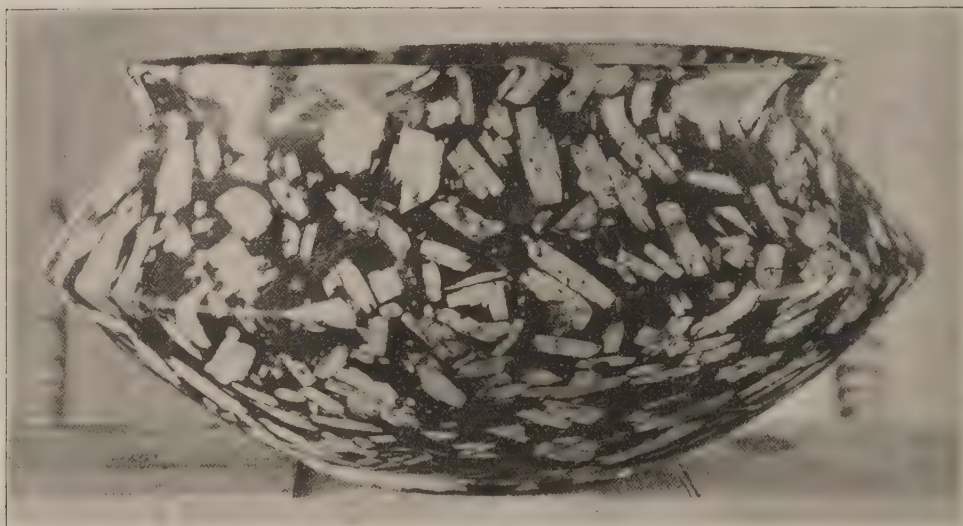


Fig. 124. Porphyry bowl from the Royal Tomb.

style (fig. 144), the other fragments of which were collected near, was here found resting on the floor, perhaps in its original position, and near it important parts of three other fine vases in the same style (figs. 141*a*, Plate C.; 142*a*, Plate CI.; and 143), of which other pieces had been found scattered among the *débris* at upper levels. Within the area indicated were also found the two stone lamps shown in figs. 126 and 127, and Plate XCVIII., fig. 123, S. 15, 16, the cylindrical limestone vessel (fig. 123, S. 14), and practically the whole group of alabaster vases illustrated in fig. 125, Plate XCIX., with the exception of the two bowls. Some

of these were more or less intact and actually in position, others tumbled over, while others again were only to be reconstructed from scattered fragments.

Near the centre of this area lay an exceptionally large bronze mirror plate (fig. 123), with traces of its ivory handle. By it was a crystal bead of exceptional size (fig. 134). Two whorls or button-like beads of the same material (figs. 135, 136) were found in the vicinity, and nearer the entrance a long oval bead of yellow translucent steatite. Close to the above group was a small crystal pommel (fig. 133) apparently belonging to a dagger with a cross perforation for a metal pin. Somewhat nearer the edge of the sepulchral pit were found the remains of two silver goblets. Of one of these only a part of the side and the attachment of the handle were preserved (fig. 139), but sufficient remains of the other existed in a crushed condition to make possible a complete restoration of its shape (fig. 140).

Near the blocked entrance of the great chamber were the crushed remains of a tripod hearth of hard plaster resembling on a somewhat larger scale the tripod hearth found in the large Chamber-Tomb No. 14, of the Zafer Papoura Cemetery. (See above, fig. 33.) By it were found some of the charcoal embers originally placed on it, actually transported thither, it may be, in this case from the hearth of a Palace hall. We have here an interesting example of the same sepulchral rite by which warmth was supplied to the dead, of which humbler illustrations are seen in the clay chafing pans found in other Minoan graves. Judging from the fragmentary remains of the portable hearths brought to light, its height was about 23 centimetres, which, if we follow the proportions of the better preserved hearth of Zafer Papoura, would give a diameter of about three-quarters of a metre.

On carefully exploring the cement floor of the chamber a series of elongated cuttings appeared along its western area, and the possibility naturally suggested itself that these were the openings of grave-pits. On clearing these out, however, they all proved to be shallow, and it became evident that they were the work of plunderers in methodical search for sepulchral cists, or other deposits of precious objects. It was only on approaching the north-east corner of the tomb that a more finely cut opening in the plaster appeared which did actually lead to the cist grave briefly referred to above.

Except that the lower part of the grave was composed of masonry instead of being simply cut out of the soft rock, the general principle observed was that of the shaft-graves of Zafer Papoura. Here as there the preliminary pit, in this case only 70 centimetres deep, led to a narrower cell, with ledges round on which to rest its covering slab. (See sections, Plates XCV.-XCVII.) The grave

ran from east to west, like the major axis of the chamber. The covering slabs when brought to light proved to be a row of rough irregular blocks not by any means comparable to the slabs of the better class of shaft-graves at Zafer Papoura. This in itself was a discouraging feature, and it was considerably heightened by the fact that at the east end, near the entrance to the chamber, a block was wanting, and a piece of the end masonry of the cist had fallen in. On the removal of these rough slabs the cist itself was brought to light, solidly constructed of limestone blocks, the inside surface of which showed traces of a stucco facing. The cell within was 2·33 metres long by 72 centimetres in width, and proved to be 1·12 metres deep, the bottom being formed by the soft virgin rock. The upper part was filled with a clayey stratified deposit, the infiltration of which into the grave was due to winter rains. This deposit contained no remains, but at the east end of the grave, where a covering slab was missing, fragments of painted pottery belonging to the group of finds on the floor of the chamber had found their way. Beneath the clay deposit there came to light two fallen blocks, a clear sign of former disturbance, and the whole grave proved to be filled with mere *débris*. Near the bottom, however, some small vestige of its former contents was discovered, in the shape of fifteen lapis lazuli beads like those found above the fore-hall, and another ape pendant of the same material. Part of a human leg bone was also brought out.

The fact that the niches of the fore-hall and principal chamber had been re-used for interment in very late Minoan times makes it probable that the cist itself may also have been used for a secondary interment during this period. This would account for the rough covering slabs, answering to sepulchral usage, but evidently not belonging to the original grave, that had been placed over it. No doubt the Royal Tomb itself had already been long since plundered.

Next came the still later plunderers, who left their traces in the discarded relics found in the upper layer of the fore-hall. These intruders evidently removed the covering slab at the east end of the cist and a block of the actual masonry, and would have begun their operations by throwing out the secondary interment. Grubbing down below this they seem to have found a few objects belonging to the original burial which earlier plunderers had left, including the bowls of porphyry and alabaster. From the way in which the porphyry bowl was smashed up, it does not seem that those who extracted these objects, at the cost of much labour and probable risk, were gratified with the results of their undertaking.

That the silver goblets of which the remains were found near the edge of

the grave, and some of the other smaller objects that were brought to light on or near the floor of the chamber, had been originally contained in the sepulchral cist is probable enough. On the other hand it is clear that the larger vessels found outside, such as the great painted jars in the Late Palace style, could never have been placed in the cist itself. We have here therefore indications of an arrangement analogous to that found in Tomb No. 36 of the cemetery, in which the bronze vessels and other objects were placed above the covering slabs, while the gold-mounted sword and jewelry lay below, beside, or on the body. The large chamber-tomb No. 14 also presents obvious points of comparison. Not only did it contain a similar portable hearth, but there seems to have been in this case a double disposition of the *peculium* of the dead recalling that of the Royal Tomb. There are reasons for supposing that the personal ornaments and other precious objects which had all been abstracted were originally contained either in the small sepulchral cist visible in the floor or in a portable funereal chest. The household utensils, however, which though in this case of bronze, had been left untouched, stood beside the hearth on the floor of the chamber.

Of the wealth in jewelry and other objects of precious metals once contained by the Royal Tomb we have little more than an indication in the gold hairpin, silver vases, and lapis lazuli beads and pendants. It is evident that on more than one occasion it was thoroughly ransacked for such objects, and even the bronze vessels, which may be supposed to have outnumbered those of painted clay, had disappeared from the floor of the funereal chamber. It is on the whole surprising that it should have been possible to obtain a record of so much, though the final results were only obtained by the careful piecing together of fragments distributed throughout the whole of the vast mass of *débris* extracted from the tomb, and the further sifting of the surface earth of a large part of the neighbouring field for fragments thrown out in the course of the previous quarrying. The porphyry bowl in particular, though unquestionably of Minoan workmanship, is worthy both in fabric and material to be set beside the most exquisite vases in hard stone found in the tombs of early Egyptian kings. The fine series of alabaster vases includes many imported Egyptian vessels, and the painted vases afford new and splendid illustrations of the Palace style of Knossos.

§ 2. *Earlier Class of Objects found in the Royal Tomb.*

1. Bowl of deep green and black porphyry with white crystals. Diameter 38 centimetres, height 13 centimetres. Fig. 124. The underside is seen on fig. 123, S.1 (Plate XCVIII.). On either side of the most prominent part of the exterior border are two small vertical perforations, perhaps originally intended for purposes of suspension, which had been carefully filled up, apparently with similar porphyry. Only one small fragment of this bowl (from the rim) is wanting.

The shape of this vase does not seem to answer to any Egyptian type. At the same time it might easily be a derivative form descended from certain types of bowls of diorite and other materials belonging to the Early Empire, examples of which occurred at El Kab. The recurved rim and carinated contour is also characteristic of this Egyptian group. Moreover, a similar dark green porphyry was also in use in Egypt as a material for vases during the early dynastic period. Rough blocks of green porphyry answering to the material of the present bowl were found in the Palace at Knossos; many of these worked into a later wall in the Domestic Quarter. The porphyry itself seems to be the *lapis Lacedæmonius*, and to have been imported into Minoan Crete for various purposes from the quarries of Mount Taygetus. In Late-Minoan times it was a common material of gems. (See Fig. 124.)

2. One-handed Egyptian vase of coarse alabaster. Height 25·3 centimetres, diameter 14 centimetres. (Fig. 125, S.2, Plate XCIX.) The exterior of the handle shows perpendicular and horizontal grooves, and is prolonged in a grooved collar round the neck of the vase. A part of the rim was wanting, and has been restored in plaster. This vase, unquestionably an imported vessel, belongs to a very common Egyptian class. The present specimen greatly resembles one from an early Eighteenth Dynasty tomb group at Abydos,^a now in the Ashmolean Museum. Another, of more expanded contour, but with the same characteristic handle and collar, was found in a tomb of the Lower Town at Mycenæ^b which contained a fine painted amphora of the Knossian Palace style and two stone lamps,^c also of Cretan fabric and material and exactly resembling those from the present tomb to be described below. This common Egyptian type recalls, in its globular body

^a A. C. Mace, *El Amrah and Abydos*, plate 1., Tomb D, 11. An interesting vase in the form of a hedgehog was found in the same grave.

^b See Bosanquet, *J. H. S.* xxiv. (1904), p. 325, where various similar vases are cited. Nothing exactly answering to this very characteristic Egyptian type occurs among those illustrated in Von Bissing's *Catalogue of the Gizeh Stone Vases*.

^c *Op. cit.* plate xiv. a, b. These were of grey steatite.



Fig. 123. Objects belonging to earlier interments.

OBJECTS FOUND IN THE ROYAL TOMB AT ISOPATA

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and upright neck surrounded with a collar, certain "bucchero" vases, apparently of Syrian fabric, very frequent in Eighteenth Dynasty tomb groups.^a

3. Egyptian vase of banded alabaster with a bulging contour. Height 18·5 centimetres, diameter 16 centimetres. (Fig. 125, S.3, Plate XCIX.). Baggy alabaster vases, such as this and the three succeeding examples (Nos. 4, 5, and 6) are common in Twelfth Dynasty deposits. They begin indeed still earlier, since a very similar alabaster vessel was found by Professor Petrie in a Sixth Dynasty tomb at Dendera.^b It is interesting to observe that this baggy type of Egyptian *alabastron* became the prototype of a series of painted clay vessels that characterise the very beginning of the Late Minoan ceramic style. Several of these were found by Miss Boyd at Gournia on floors of the First Late Minoan Period, and the wavy bands of the alabaster are in many cases reproduced in the painted decoration. From the frequency of these clay imitations at this time we must infer that the alabaster prototypes were largely imported into Crete about the time which corresponds with the date of the great remodelling of the Palace at Knossos. During the next period (Late Minoan II.) which immediately preceded the destruction of the Palace this ceramic type is no longer found.

4. Egyptian vase of banded alabaster of small dimensions (height 10·5 centimetres, diameter 9·5 centimetres), but otherwise closely resembling in its baggy contour No. 3 above. (Fig. 125, S.4, Plate XCIX.)

5. Egyptian vase of banded alabaster; one side imperfect. Height 7·8 centimetres, diameter 8·2 centimetres. (Fig. 125, S.5, Plate XCIX.). This small vessel resembles the above except that the transition from the base to the sides is somewhat more abrupt. A very similar vase was found in a tomb at Abydos belonging to the early part of the Eighteenth Dynasty.^c

6. Egyptian vase of banded alabaster of a more squat form than the preceding, but otherwise resembling them. Height 5·4 centimetres, diameter 8·5 centimetres. Parts of the rim and of one side are wanting, and have been completed in plaster. (Fig. 125, S.6, Plate XCIX.)

^a See for instance J. Garstang, *El Arabah*, plates xvii, xviii. The type is also frequent in Cyprus-Mycenæan tombs (Myres, *J. H. S.* xvii. p. 150, *Cyprus Museum Catalogue*, p. 37, and Murray, *Excavations in Cyprus*, figs. 62, 66, 68, 70). The term "base-ring ware" applied to this class is unsatisfactory, as these vessels rarely show anything at their base that can be called a ring. A more distinctive feature is the raised ring or collar round the neck in connection with the handle. It seems to represent the original noose of a thong handle round a neck of hard material.

^b *Dendera*, plate xxi. l b; Von Bissing, *Cat. Gén.*; *Steingefässe*, plate xxi. No. 18619.

^c Tomb Δ 15. The group of objects from this tomb is in the Ashmolean Museum.

A close parallel to this vase is again afforded by an *alabastron* from an early Eighteenth Dynasty tomb at Abydos.^a

7. Small bowl of finely translucent alabaster. Restored from remaining portion of one side, including handle. (Fig. 125, S.7, Plate XCIX.) Original diameter, 7.5 centimetres. It had two semi-cylindrical ledge handles without perforation. An allied form of stone vase, with a flat rim on top, is of great antiquity in Egypt, going back to the pre-Dynastic period. In these vases, moreover, as in the present example, the ledge handles, though generally perforated for suspension, are not infrequently left solid. The flat rimmed form is common throughout the Early Empire, and supplies the prototype of a long series of Minoan stone vases.^b Sometimes the flat rim was made in a separate piece,^c and it is possible therefore that this was the case with the present vase. As, however, Egyptian ledge-handled vases with separate rims do not seem to be known after the period of the Early Empire,^d it is possible that the present vase is of Cretan fabric, representing a survival of a much earlier Egyptian tradition.^e Stone bowls of plain bird's-nest form, with rounded shoulders and showing neither rim nor ledges, are common among Cretan remains, going down to the late Minoan Period.

8. Egyptian vase of banded alabaster, with short foot, globular body, and cylindrical neck. Height 9.7 centimetres, diameter 8 centimetres. Parts of the rim are wanting. (Fig. 125, S.8, Plate XCIX.) This is a very typical Egyptian form,^f specially common in the time of the Eighteenth Dynasty. An imported vase of this type was found in a Mycenæan tomb at Enkomi.^g

9. Egyptian vase of alabaster, with wavy grain. The rim was wanting and has been restored. Original height 11.4 centimetres. (Fig. 125, S.9, Plate XCIX.) The type in Professor Petrie's opinion belongs to the Eighteenth Dynasty.

10. Egyptian vase of banded alabaster, mouth wanting. Original height 9.8 centimetres. (Fig. 125, S.10, Plate XCIX.) This is also an Eighteenth Dynasty type.

^a Tomb E. 288. The group of objects belonging to this is also in the Ashmolean Museum.

^b See my account of the *Hagios Onuphrios Deposit* in *Cretan Pictographs, etc.* (Quaritch, 1895), 118, figs. 111, 112, where a Fourth Dynasty vase of this type is compared with one from near Olous (Elunda), Crete.

^c Ledge-handled stone vases, with a separate rim, already occur in the pre-Dynastic period, as at Nagada.

^d A Fourth Dynasty example of this from El Kab is in the Ashmolean Museum.

^e It is by no means certain that the present bowl had any detached rim.

^f Compare F. von Bissing, *Steingefässe* (*Cat. Général des Ant. Égyptiennes au Musée de Caire*), 18355 and 18356.

^g Murray, *Excavations in Cyprus*, p. 25, fig. 41 (No. 1815).



Fig. 125. Group of Alabaster Vases.

OBJECTS FOUND IN THE ROYAL TOMB AT ISOPATA.

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11. Bowl of banded alabaster. Diameter 20·4 centimetres, height 8·4 centimetres. (Fig. 125, S.11, Plate XCIX.) It has a flat base, with a round opening about 4 centimetres in diameter, and there is a round perforation half-way down the side. There seems to be no parallel to this type.

12. Two-handled spouted vase of veined and banded alabaster. Height 18·30 centimetres, diameter 20 centimetres. (Fig. 125, S.12, Plate XCIX.) This vase answers in shape to a very representative Minoan class. As in the case of the clay vessels of this type, the spout does not fully open into the body of the vase, but is applied, as it were, to the wall of the vessel, a round hole through this supplying the means of communication.

Clay vases of this type are known in Crete by the close of the Early Minoan Age (cf. Miss E. H. Hall, *Early Painted Pottery from Gournia, Crete*, 5, 6) and are rife throughout the Middle-Minoan Period. They are still not infrequent in the immediately succeeding Age (Late-Minoan I). In the later remains of the Knossian Palace, however, characterised by the fine Palace Style of painted ware, they are no longer found. Neither did a single example occur in the cemetery of Zafer Papoura. Middle Minoan specimens are known in stone, and a spout and part of the rim of a vase of this type of banded alabaster were found in a deposit belonging to the very beginning of this period, below the later Palace floor in the region of the Pillar Rooms.

The curious spout of these vases with, as in this case, its relatively small round hole communicating with the interior, suggests an interesting comparison with a class of Egyptian vases of copper and alabaster belonging to the early Dynasties. The Egyptian form is handleless, but otherwise the parallelism is so close, that in the presence of other similar borrowings, it is fairly safe to conclude that the type is of early Egyptian derivation, the handles being added in conformity with Cretan taste. Of the alternative Egyptian types the copper form seems to be the original, the on-set of the spout being more easily reconcilable with metal than with stone technique. Fourth Dynasty examples of this type in copper and alabaster from El Kab and Mahasna are in the Ashmolean Collection.

In the case of one of these (of alabaster) and of another (of copper) in the Gizeh Museum from Mahasna,^a the spout is divided into two by a partition along the centre, each division having a separate hole. Among the Middle Minoan clay vases from Gournia of the same form as the alabaster vessel from the Royal Tomb are some showing a double spout, a strong corroboration of the view expressed above that they should be regarded as derivatives of the proto-dynastic Egyptian type.

13. Bowl of banded alabaster with small flattening at base. Diameter 19 centimetres, height 10·4 centimetres. (Fig. 125, S.13, Plate XCIX.)

14. Spouted cylindrical vessel of veined limestone, with two horizontal handles having vertical openings. Height 19 centimetres, diameter 21 centimetres. This vase is some-

^a Von Bissing, *Metalgefässe*, etc. 3436.

what coarsely executed and the interior irregularly hollowed out, so that the walls in places are very thin. (Fig. 123, S.14, Plate XCVIII.)

15. Lamp of purple gypsum with raised coils resembling shells on its two sides. (Fig. 126 and fig. 123, S.15, Plate XCVIII.) Height 9.2 centimetres, diameter of upper part

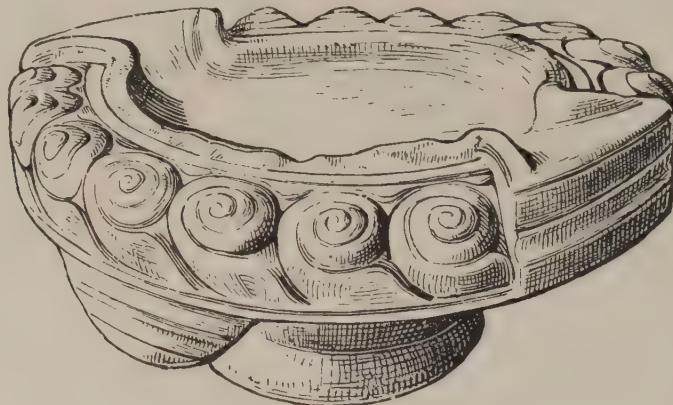


Fig. 126. Lamp of purple gypsum.

20 centimetres. This lamp is of a type and material very characteristic of the late Palace remains. A lamp with similar decoration in grey Cretan steatite was found in a chamber-tomb at Mycenae, together with remains of two fine amphorae of the Palace Style.^a

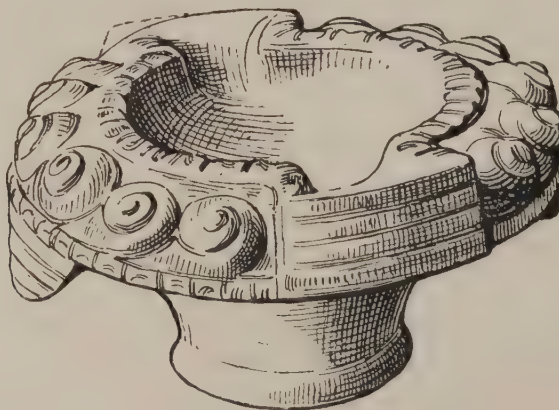


Fig. 127. Lamp of purple gypsum.

16. Lamp of purple gypsum, similar to the above, but somewhat smaller. Height 9.3 centimetres, diameter of the upper part 16.5 centimetres. (Fig. 127, and fig. 123, S.16, Plate XCVIII.)

17-20. Steatite lids with button handles. (See base of fig. 123, Plate XCVIII.) Lids

^a See Bosanquet, *J. H. S.* xxiv. 1904, p. 322 *seqq.* and plate xiva.

of this class, as was pointed out in my account of the Hagios Onuphrios Deposit,^a are practically identical with Twelfth Dynasty Egyptian examples. They are found associated with Cretan remains of the Middle Minoan Period.

21. Fragment of a small diorite bowl. Original diameter 11 centimetres and height 5 centimetres. The contour of this vessel, as far as it is preserved, and the characteristic moulding of the rim, resemble those of vases of serpentine alabaster and other materials from Fourth Dynasty tombs at El Kab,^b now in the Ashmolean Museum. In the restored drawing (fig. 128), which is due to the kindness of Mr. C. F. Bell, the vase is shown with a flat bottom like that of the Egyptian example. Both the form and material of this bowl make it probable that we have here a part of an Egyptian vessel of early Dynastic fabric. Other examples of Old Empire Egyptian fabrics or their exact reproductions by Cretan artificers have been found on the Palace site of Knossos, and had apparently been preserved in the earlier building. Among them is a flat bowl of diorite, another of liparite, and a higher and thicker bowl of syenite.^c

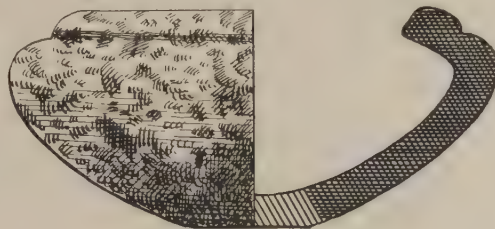


Fig. 128. Diorite bowl : restored from a fragment.

23. Small fragments of serpentine vases.

24. Hooked pin of spirally twisted gold. Length 11.5 centimetres. (Fig. 129.) It is somewhat pointed at the end and may have served as a hairpin. Bronze pins of similar type have been found on other Cretan sites.^d

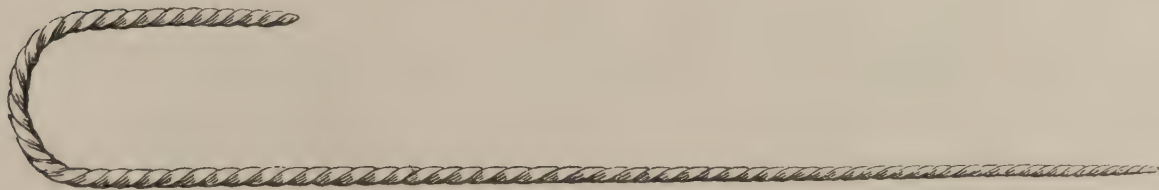


Fig. 129. Hooked pin of twisted gold.

25. Necklace of beads of lapis lazuli. The shapes are sufficiently shown in fig. 130. The arrangement, however, there given is conjectural. The section of the square type of the elongated beads approaches that of certain paste beads found in a chamber-tomb at Phaestos.^e The lapis lazuli examples of the present necklace are, however, more elegant

^a In *Cretan Pictographs*, etc. Quaritch, 1895, p. 117 *seqq.*

^b Quibell, *El Kab*, plate x. pp. 17, 30.

^c A. J. E., *Report : Knossos*. B. S. A. viii. p. 121 *seqq.* and ix. p. 98.

^d Eg. Augo, Gournia, Zakro, and Palaikastro. See H. R. Hastings (*American Journal of Archaeology*, ix. 279), who also regards them as hair-pins.

^e Savignoni, *Necropoli di Phaestos*, 141, fig. 100 c.

in contour and obviously the work of an earlier period. The pendant beads with a quatre-foil section are also highly artistic. None of the more elaborate forms of bead here represented is known in Egypt, and there can be no doubt that the necklace is of Cretan fabric, and probably belongs to the earlier part of the Late-Minoan Age.

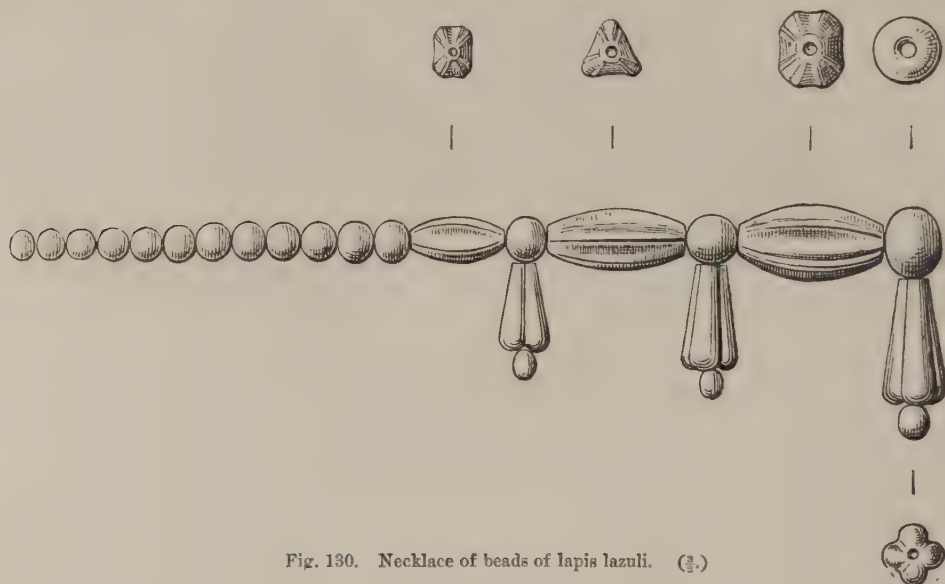


Fig. 130. Necklace of beads of lapis lazuli. (3.)

26. Pendant of lapis lazuli in the form of a monkey, with a vertical and two side perforations. Height 1·9 centimetres (fig. 131, *a*). The animal is in a squatting position raising his hands to his ears, and the tail is seen running up his back. The object



Fig. 131. Lapis lazuli pendants in form of long-tailed monkeys. (3.)

naturally suggests Egyptian parallels, the *cercopithecus* or long-tailed monkey being a favourite ornament of Egyptian necklaces (cf. Wilkinson, *Ancient Egyptians*, 1878 edition, iii. 269). From its association with the beads described above and the identity of the material there can be little doubt that this ornament, together with the figures of another monkey and a frog described below, must be regarded rather as Cretan imitations of Egyptian pendants of the same kind than as imported objects of Egyptian fabric.

27. Pendant of lapis lazuli, also representing a long-tailed monkey. Height 1·9 centimetres (fig. 131, *b*). The monkey in this case is seated on a square base with his forearms resting on the knees while the tail curls round by his right foot.

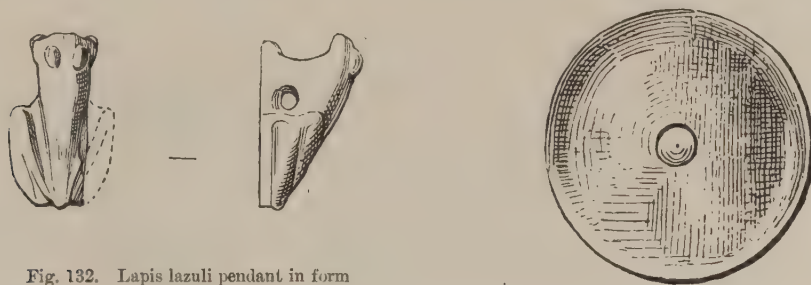


Fig. 132. Lapis lazuli pendant in form of a frog. ($\frac{3}{4}$.)

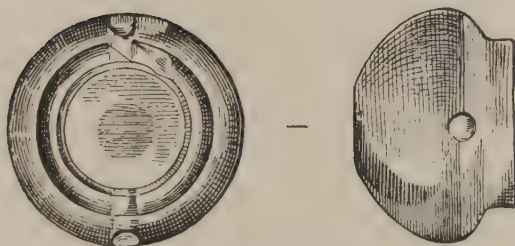


Fig. 133. Crystal pommel of a dagger. ($\frac{1}{2}$.)

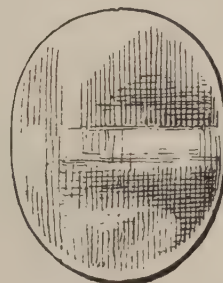


Fig. 134. Large crystal bead. ($\frac{1}{2}$.)

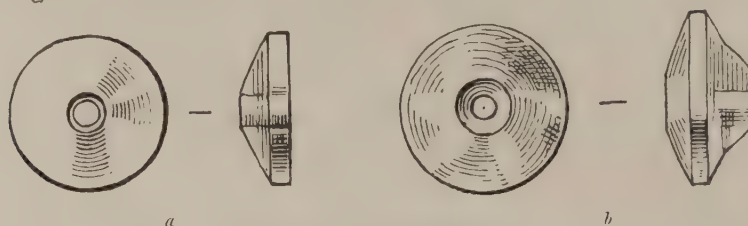
28. Bead or pendant in form of a frog perforated through the sides. A part of the hind quarters is broken off on one side. Length 1·8 centimetres (fig. 132.) The frog is also common as an Egyptian ornament. It seems to have been an emblem of Ptah (cf. Wilkinson, *op. cit.* iii. 15 and 340).

29. Crystal pommel, probably of a dagger, with side perforation for the bronze pin of the handle. (Fig. 133.)

30. Large crystal bead. (Fig. 134.)

31, 32. Crystal whorls. (Figs. 135, 136.)

33. Large oval bead of pale lemon-coloured translucent steatite. One end broken. Original length 4·2 centimetres.



Figs. 135, 136. Crystal whorls. (†.)

34. Uncertain alabaster object. (Fig. 137.) Length 4·8 centimetres. Both faces are hollowed out in the shape of a pointed oval gradually narrowing to a small slot of the same form.

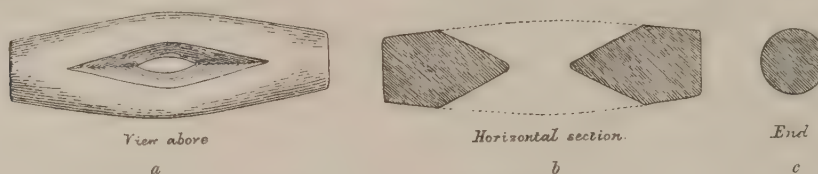


Fig. 137. Uncertain object of alabaster.

35. Clay sealing, of which about 12 examples (some fragmentary) were found. The back is pinched in so that it shows a triangular section. The major axis of these sealings

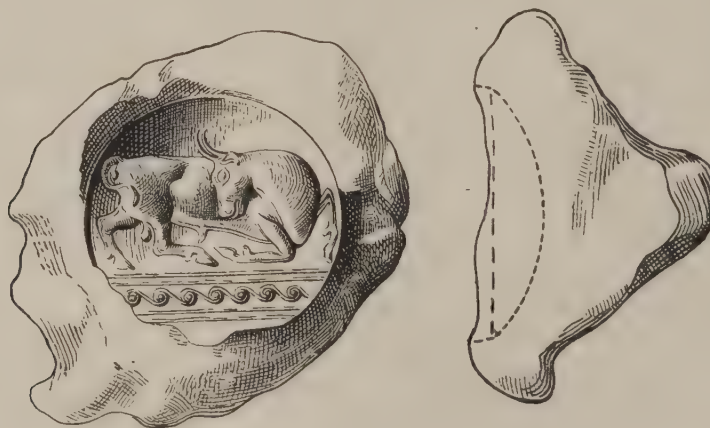


Fig. 138. Clay sealing, showing bull on architectural base. (Enlarged two diameters.)

does not, as in some cases, show any sign of a string having run through it. The face is impressed with a lentoid intaglio (diameter c. 1·5 centimetre) representing a bull in the

act of rising from a couchant position, with his head turned backwards. The animal appears above what is evidently intended to be an architectural base. It shows two horizontal lines above and below a frieze decorated with nine connected spiral coils, of which seven appear in the present impression. The engraving of the whole design is in the finest style of the Later Palace. The connected coils recall those of the two stone lamps. (Fig. 138.)

36. Large bronze mirror, 22 centimetres in diameter, with fragmentary remains of its ivory handle attaching to it. This mirror is much larger than any of those from the cemetery of Zafer Papoura. (See fig. 123, Plate XCVIII.)



Fig. 139. Silver cup (restored). (†.)

37. Silver cup with pedestal and a single handle. A part of the handle, which was fixed by three rivets, was wanting, and the cup, of which fig. 139 gives a restored drawing, was much crushed. The remains are in a highly oxydised condition, but some traces of decoration seem to be visible at the base.

38. Parts of the handle and rim of a silver cup of about the same size as the preceding and apparently of a somewhat similar form. (Fig. 140.) The handle was secured by three rivets. Its exterior attachment below terminates in an outline recalling that of the reduplicated edges of many of the double axes of Minoan cult.

39. Tripod hearth of hard plaster with white facing.

40. Large painted "amphora" with three handles, showing decorative designs of the

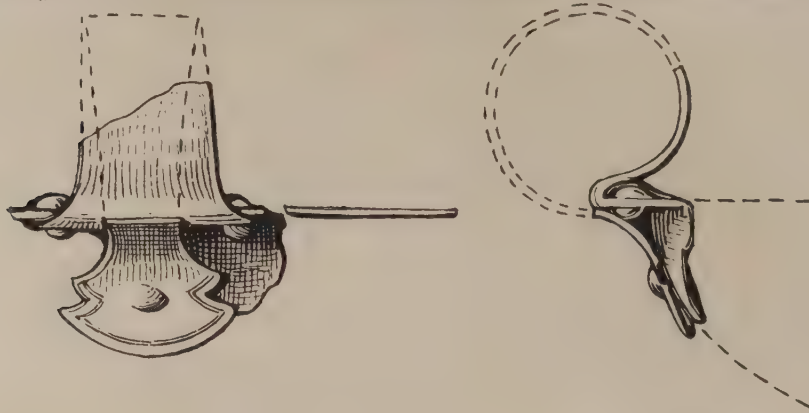


Fig. 140. Handle and part of rim of silver cup.

latest Palace Period (Late-Minoan II.). (Fig. 141a, Plate C.) Height 67·5 centimetres, diameter 49·5 centimetres. On one side is an octopus of a somewhat symmetrical decorative character with conventional rockwork. On the other side are seen conventional sprays



Fig. 141b. Part of the back of a painted "amphora."

and coils with stellate and other flowers. (Fig. 141b.) Round the neck is a foliate band. The vase was put together from scattered fragments, and several parts are missing, but enough remains to reconstitute most of the design.



LARGE PAINTED "AMPHORA" (fig. 141a) WITH OCTOPUS AND FLORAL DESIGNS
FROM THE ROYAL TOMB AT ISOPATA.



LARGE PAINTED "AMPHORA" (fig. 142a) WITH CONVENTIONALIZED PLANT DESIGNS.
FROM THE ROYAL TOMB AT ISOPATA.

41. Large painted "amphora" with three handles of the same shape as the above. Height 63·5 centimetres, diameter 42 centimetres. This magnificent vase, like the other, was put together from scattered pieces, but a zone round the centre of the body was almost entirely wanting. Happily, however, enough remained to complete the design with certainty, and fig. 142, Plate CI., from a drawing by the Danish artist, Mr. Halvor Bagge, gives a complete restoration of the vase. Immediately below the collar is a double band of foliage, with a series of reduplicated edgings below directly suggested by chased metal work, such as that of the bronze bowl from the Palace hoard shown in fig. 116 above. The conventionalised plant ornament that surrounds the body displays a stately and quasi-architectonic style very characteristic of the mature art of the Later Palace.

The flat upper rim of this vessel is decorated with what may be termed the wave-and-star pattern very frequent on the Knossian Palace frescoes.^a (Fig. 142b.)



Fig. 142b. Rim of painted "amphora."

A variant of the same design, in which the stars are superimposed, as the waves recur in the painted decoration of the hearth in the Megaron of the Palace at Mycenae. The same pattern is also found in ivory reliefs of the period as the decoration of the wings of griffins and sphinxes.

42. Painted "amphora" with three handles, similar to the above. Height 48 centimetres, diameter 37 centimetres. (Fig. 143.) The upper part of this is fairly complete, but parts of the base are wanting. Round the neck is a single foliate band. The band of ornament that runs round the shoulders of the vase varies on the two sides, both halves, however, show spiraliform designs, probably derived from metal work. The double lines of connected spirals in particular recall the decoration of a gold cenochoë and cup from the Acropolis graves of Mycenae. The other pattern seems to be a derivative form of the simpler

^a See Fyfe, "Painted Plaster Decoration at Knossos": *Journ. R. I. B. A.* x. 127, where it is referred to as "tooth ornament."

spiraliform motive on the gold breast plate from Schliemann's First Grave. (*Mycenae*, 301, fig. 458.) The field below this zone is divided into three parts by foliate sprays



Fig. 143. Painted "amphora" with spiral patterns.

descending vertically beneath the handles. The three spaces thus divided off show an uniform decoration of very crude conventional sprays, which were evidently very hastily

finished by the painter of the vase. These have a distinctly decadent aspect, but the foliate sprays and metal-work patterns of the rest of the decoration take us well back within the limit of the Palace Period.



Fig. 144. Painted "amphora" with architectural motives.

43. Painted "amphora" with three handles, similar in form to the others. Height 50·3 centimetres, diameter 34 centimetres. (Fig. 144). The greater part of this vessel could be

put together. The shoulders of the vase are surrounded by scrolls and a foliate band, and similar foliate bands descending from beneath the handles to the base divide the whole body into three parts.

The lower spaces are decorated with plain curving sprays, but the upper part of the body is occupied with two zones of a remarkably architectonic character divided from one another horizontally by a checkered band, which recalls the black and white representations of masonry on the "miniature frescoes" of the Knossian Palace.^a From this again vertical bands of the same checker work, rising like piers from the imitation masonry below, traverse the upper of the two zones in question, while others descend across the lower zone. Nor does the architectural parallel end here. The imitation masonry is associated in both zones with figures in the form of two half-ovals with an upright division in the centre. These figures obviously represent the elongated half-rosettes, with the rudimentary triglyphs between them, which characterises the Minoan and Mycenæan friezes. No one indeed can compare the miniature fresco from the Palace of Knossos, showing the façade of a shrine in which a frieze of this kind is combined with black and white checker work, indicative of masonry, without recognising the indebtedness of the present ceramic design to some such model. In some cases here we see the checker work forming the division between the two wings of the frieze ornament, a feature which also recurs in the central bar of the triglyph of the Knossian shrine. In other cases this middle division is filled with a decoration consisting of interlocked spirals, and a similar ornament again recurs in the same connexion on portions of stone friezes found at Knossos and Mycenæ.

One feature remains to be considered of special value in defining the source from which this ceramic design was derived. This is the appearance of two objects with strongly recurved edges proceeding from either side of the middle division of these designs and filling the two arched spaces left by their double borders. There can be little doubt, in view of other decorative degenerations of the same object, that these are derived from the two curving ends of the ever-recurring sacred double-axe of the Minoan cult, as seen on either side of its shaft. We are once more carried back to the same sphere of Minoan religious architecture as that illustrated by the temple fresco. The ceramic remains of the Palace of Knossos have indeed, as I have elsewhere pointed out, abundantly attested the existence of a special class of vases exhibiting the sacred double axe as their principal design. In the present case we have a closely parallel example of a religious decorative style, in which not only the sacred emblem but details taken from the shrine itself are represented. On a recently discovered fresco from the South-West Hall of the Palace at Knossos are seen parts of a shrine with checker work imitation of masonry associated with

^a It must be at the same time observed that, both in the case of the architectural frescoes and the vase, this checker work design is by no means an exact representation of the isodomic courses of the best Minoan masonry. It is rather a conventional equivalent for similar construction suggested, it seems, by Egyptian painted façades, on which such checker work is frequent. Rather, indeed, it represents the appearance of a painted plaster facing than of actual structural features.

columns in which are inserted the blades of double axes,^a while on the painted sarcophagus found by the Italian mission at Hagia Triada the trunk-like shafts of the axes rise from bases with similar checker work.

It is worth noting that a complete parallel to these ceramic adaptations of features of Minoan religious architecture is supplied by a vase from a Cypro-Mycenæan tomb at Enkomi. The design on this vase (as was pointed out in my *Mycenæan Tree and Pillar Cult*)^b shows a two-storeyed building in which "female votaries are seen with their hands raised in the act of adoration on either side of what appear to be square columns."

The above parallel, which enables us to connect the principal designs of the present vase with details taken from religious architecture, supplies at the same time the true origin of later versions of similar motives that occur in the more decadent Minoan Age, and survive on the pottery of the Geometrical class. Checker-work panels are seen on vases of the ensuing Third Late-Minoan Period,^c and the same design occupies the central field of the painted *larnax* from the Cymbal-player's tomb at Mulianà. In describing this latter example indeed ('Εφ. 'Αρχ., 1904, p. 40), Dr. Xanthoudides had already expressed the opinion that the checker-work ornament was copied from Minoan masonry. The same motive is very characteristic of Cretan Geometrical ware.

The other architectural feature of the present vase with its medial bar and elongated oval wings, which as we have seen is simply taken over from the reliefs of Minoan friezes, survives in a similar way in later ceramic decoration. It is found on late sherds at Mycenæ (Furtw. u. Loeschke, *Myk. Vasen*, taf. xxiii. 322, 327), and similar degenerations of the Double Axe are also seen on either side of the middle upright, but without the surrounding half ovals (*loc. cit.* No. 325).

§ 3. Architectural Details of the Isopata Tomb. By D. THEODORE FYFE.

Regarding details of construction, it is of greatest interest to determine, as far as possible, the exact form of roof in the inner chamber. The ends of the chamber at east and west were vertical, from the evidence of the nine existing courses of the east wall. The sides, at north and south, sloped inwards, judging from the five existing courses of each. The facework of the south wall shows a concave surface, that of the north wall a straight surface, but the lines governing the two slopes have the same inclination from the vertical.

The complete vault may easily have been formed by a series of straight faces approximating

^a A. J. E. *Report*; *Knossos*, 1904, B. S. A. x. p. 41 *seqq.* and fig. 14.

^b P. 13 and p. 14, fig. 6.

^c Cf. Hogarth, B. S. A. vi. 103, fig. 31, from the Dictæan Cave. Savignoni, *Necropoli di Phaestos*, tav. I. 2. Furtwängler u. Loeschke, *Myk. Vasen*, Taf. xxiv. 341.

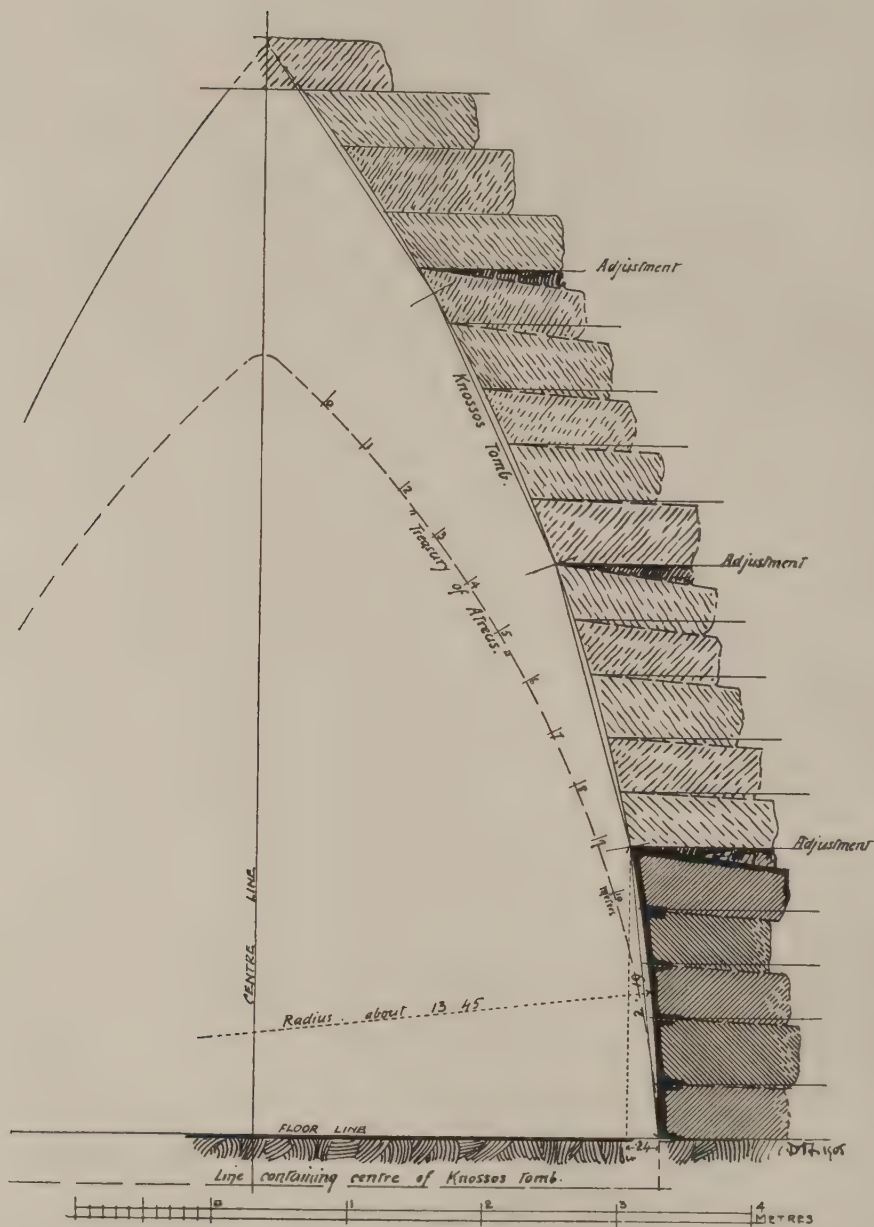


Fig. 145. Conjectural restoration of the vault of the principal chamber of the Isopata Tomb.

to a curve. By accurately working out an extension of the existing curve in geometrical progression, as far as the central axial line of the chamber from east to west, what appears to be nearly if not exactly the complete curve may be arrived at. (See fig. 145.) This curve would have a centre a little below the floor level (which is the starting point of the masonry), dependent on the fact that neither here nor in the Treasury of Atreus at Mycenae is there a vertically-faced course of masonry at the base. The slope begins at once. In the Treasury, the initial slope is greater, and the centre of the curve in consequence still further below the floor level.

From the working out of the aforesaid curve, the apex of the vault would be about 8 metres above the floor, so that the chamber would have approximately equal height and length. Dr. Evans suggests that this is intentional, or, in other words, given the main dimension of area, the height can be ascertained. From the evidence of the Treasury of Atreus, which is nearly as high as its diameter, it appears probable that some such rule was regarded in the construction of these chambers.

The existing stonework of the sloped sides of the chamber is built in heading courses, except the lowest course, which is mostly of stretchers. This we should expect. It is noticeable that the courses are not laid with horizontal beds, but that from below upwards the beds have a constantly increasing downward slope towards the outside. (See fig. 145.) If this principle were carried out to the crown of the vault, the topmost stones would have an impossibly acute angle. We must therefore assume that the downward slope was corrected at intervals, as indicated in the diagram. The downward slope was obviously introduced to lessen the chance of the masonry falling inwards.

The evidence of the detached stones with cut-away faces, which were found lying about, further tends to confirm the restoration shown. The sharpest angle found was $54\frac{1}{2}$ degrees, which corresponds with the angle of the topmost course in the restoration. The structure of the vault would diminish in thickness towards the top only on account of the increased cut-away of the upper stones, as the upper beds of the stones found average about a metre in width throughout. The courses may have diminished slightly in *height* towards the top, and the vault may have been closed at the top by a layer of stone slabs, as shown in the restoration.

This tomb differs from most of the mainland ones in that the *dromos* is taken down at a steep slope in ground which is nearly level, and is not run horizontally into a hill-face. In consequence the apex of the vault of the inner chamber must have risen some 8 feet or 9 feet above the present surface level. Even so, such a horizontally built oblong structure would be stable, more so than a circular one, provided the sloped stones of the vault were prevented from falling outwards by a certain amount of earth support. The soft rock-cutting on all sides is roughly vertical, and the increasing interspaces between it and the receding walls of the structure were probably filled in with earth and stones rammed down, after the same manner in which the backing for a retaining wall is formed.

The other parts of the structure now call for brief notice. The fore-hall was probably roofed with stone slabs or lintels at the existing highest point, or at most a course higher,

after the manner of the sepulchral niches.^a This roof therefore, like that of the inner chamber, was, in effect, a tunnel vault.

The masonry facing of the fore-hall is smaller than that of the inner chamber, and the stones are not in heading courses.

The cross walls blocking the entrances from *dromos* and fore-hall and from fore-hall and inner chamber, were apparently of the more temporary construction suited to their purpose, but a certain effect is obtained in the first mentioned (which is better preserved) by means of the courses in ashlar work which alternate with the rubble filling. (See Plate XCV. *b.*)

There is nothing that calls for special notice in the construction of the cist grave except the square sinking on the south side. This may have been intended for the attachment of some lining which has now perished. Some fragments of slabs were found in the *débris* of the cist, which probably belonged to the roofing slabs which must have closed the grave.

A word should be added about the stonework generally.

The method of building is in courses throughout, not, as at Orchomenos, in rubble work with ashlar dressings. More attention was paid to getting a roughly true surface than to accurate bedding of joints. Interstices in the joints are packed with small stones and sometimes with pieces of slate, set into mortar slapped on after the stones were laid, exactly as is done in Crete nowadays. It is difficult to know if the walls were plastered or left in stone.

The face of the stonework is not finely dressed or rubbed as is the finest Palace work at Knossos. Here tool marks are everywhere visible, but, on the other hand, no trace of a plaster finish is discoverable in the inner chamber, and only a small quantity in the fore-hall and *dromos*. My own impression, however, is that the tomb was finished, or intended to be finished, in some way.

§ 4. *General Conclusions regarding the Isopata Tomb.*

A general survey of the finds from the Royal Tomb described in Section 2 leads to conclusions hardly consistent with the view that these remains all belong even approximately to the same date. The fine painted vases with their architectonic designs clearly belong to the closing period of the Later Palace and to the phase of art described as Late-Minoan II. Certain Egyptian *alabastra* like the one-handled vase, No. 2, and those described under Nos. 8, 9, and 10, must be regarded as early Eighteenth Dynasty fabrics more or less contemporary with these fine ceramic products of the Palace Style. The stone lamps and plaster

^a Cf. also the roof of the smaller chamber at Orchomenos. Perrot, *L'Art*, etc. vi, 446.

hearth, the bronze mirror, the crystal pommel, the clay sealings, and probably some other relics may be referred to the same period, or roughly speaking to the fifteenth or sixteenth century before our era.

But when we come to objects such as the more baggy class of alabaster vessels of the types represented by Nos. 3 and 4, the centre of gravity of our comparisons tends at once to move up to a higher chronological level. It is true that certain offshoots of these types, as for instance Nos. 5 and 6 of the above series, are still found in early Eighteenth Dynasty deposits. But the nearest parallels to such *alabaster* as Nos. 3 and 4 occur in Egyptian tombs of the Twelfth and even the Sixth Dynasty. They are, as all Egyptologists who have seen them agree, characteristic Middle Empire forms, in other words, they belong rather to the Third than to the Second Millennium before our era, and to a period contemporary with the Middle Minoan of Crete.

There is, moreover, a remarkable proof that about the close of the period in question this particular type of baggy *alabastron* was well known in Crete. Miss Boyd's excavations at Gournia have brought to light, among floor deposits belonging to the immediately succeeding age (Late-Minoan I.), a series of painted vases, not only reproducing the characteristic shape of these Egyptian *alabaster*, but even imitating in the chevron patterns on their walls the waved bands of the stone. But by the Second Late-Minoan Period, to which the painted vases from the present tomb belong, these ceramic imitations have disappeared.

It has been further shown above that the hole-spouted vase of alabaster, No. 12, has very early connexions. The form itself seems to be derived from that of a class of Egyptian vessels of copper and alabaster characteristic of the early Dynasties, and it had already taken root in Crete during the Early Minoan period. It is specially common during the Middle Minoan Age, but by the concluding epoch of the Later Palace it seems to have fallen into complete desuetude, and no vessels of this shape in the Palace Style have come to light. On the other hand, the only parallel in alabaster is a fragment of a similar vessel from an early deposit found under the Later Palace floor in the neighbourhood of the Pillar Rooms and belonging to the very beginning of the Middle Minoan Period.

The magnificent porphyry bowl (fig. 124) recalls in its material and to a certain extent in its form the vessels in similar hard stones from royal and other tombs of the early Dynasties. The fragment of a diorite bowl (No. 21) reproduces the characteristic rim and contour of Fourth Dynasty examples, and if, as seems most probable, it formed part of an imported article from Egypt, it cannot with any reasonable probability be brought down much below that early period.

Vases of these fine igneous formations are conspicuous by their absence in the considerable store of stone vessels found in the later Palace of Knossos. On the other hand they fit on to a much more ancient group represented among the remains of the earlier Palace. Among these may be mentioned a syenite pot which in Professor Petrie's opinion is an Egyptian fabric of one of the early Dynasties, and parts of two exquisite bowls of diorite and liparite, not to be distinguished from the finest fabrics of the kind discovered in the royal tombs of the first four Dynasties of Egypt. It is possible that in one or the other case we have to deal with Cretan copies of these early forms, and that such may have continued in use to a later age than the Egyptian prototypes. But the evidence from the Palace site at Knossos clearly tends to show that vases of this class did not continue to be in vogue, at least beyond the limits of the Middle Minoan Period. Even heirlooms of the kind must have had a tendency to disappear.

Indications such as the above strongly point to the conclusion that the Isopata tomb itself goes back to an earlier period than that represented by the vases in the later Palace Style. Nor do these indications, supplied by objects found within it, stand alone. A valuable piece of evidence tending in the same direction is afforded by certain signs cut on the blocks of which the tomb was constructed. A comparative study of the signs on the blocks of the earlier and later Palaces of Knossos and of the successive phases of each brings out the fact that the work of each period may be roughly distinguished by the character of these marks. Particular signs were prevalent during certain periods. The method of cutting, moreover, at least in its broad aspects, underwent a gradual modification. The signs of the earliest period are as a rule large and broadly cut, like those on the block described above from a grave at Zafer Papoura. (Fig. 9.) Those of the intermediate age show more or less transitional types, while the latest class are of smaller dimensions and finer incision.^a

Several different signs are cut on the blocks of the Royal Tomb, and the character of these corresponds with those of the intermediate class. This class

^a The question as to how far these signs are to be regarded as ordinary masons' marks or to what extent they may be held to have a religious significance is beyond the scope of the present paper. It is evident that some of the forms correspond with characters of the conventionalised pictographic script of contemporary seals and clay documents. At the same time from the manner in which they were used on the blocks of Minoan buildings it seems reasonable to conclude that they stood rather for signs than letters. It is clear that some of them, like the double-axe, had a religious value.

marks the earliest structures of the Later Palace at Knossos, which represent the closing phase of the Middle Minoan Period (M. M. III.).

In the Palace itself it is extremely rare to see more than two signs together on the same block. There is indeed a single instance of a compound figure made up of two signs being associated with another. The Royal Tomb, however, has supplied a hitherto unparalleled example of four of these signs following each other on the same stone. This interesting phenomenon occurred on a narrow block, a metre in length, and 20 centimetres high, which from the position in which it was found seemed to have originally served as the coping stone of the niche at the back of the main chamber. (Fig. 146.) Of these signs that on the extreme right exhibiting an eight-rayed star in a circle is new to the series, though the eight-rayed star itself is common enough. The other signs, namely the double axe, the branch, and the trident, are of special frequency on blocks belonging to the earlier structures of the Later Palace.

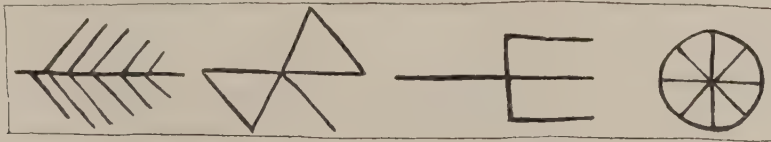


Fig. 146. Coping stone with incised signs, from niche of the Royal Tomb at Isopata.

The double-axe sign, which is the most constantly recurring of all those found in the Palace, had certainly a significance as the emblem of the principal Minoan divinities. In the Royal Tomb, too, it is in the ascendant, occurring in a conspicuous position on the wall north of the entrance of the main chamber, twice in the north niche of the fore hall, and elsewhere. The plain cross, also known on the Palace site, is also found, and two more tridents on a single block.

Thus not only the character of the incision but the choice of the signs correspond with that in vogue on the Palace blocks of the Third Middle Minoan Period.

Whether then we regard the earlier part of the contents of the tomb or the signs on its blocks, we are taken back for the date of its construction to a period long anterior to the closing days of the Later Palace. It can hardly be supposed indeed that Minoan Knossos, which to the last seems to have exercised a dominant influence on the arts of mainland Greece, was unable, during the period which is marked by the great domed chambers of Mycenae, to produce at least their architectural equivalent. The cross section of the main chamber here, with its

pointed tunnel vault, bears, it is true, some resemblance to that of the circular vault of the Treasury of Atreus, but structurally the latter represents a great advance on the former. The workmanship is finer, the area covered in the case of the Treasury is over three times as great, and the domed vaulting is in accordance both with static and dynamic principles.

Struck by these contrasts, and approaching the matter from the purely architectural standpoint, Mr. Fyfe arrived at a conclusion regarding the comparative date of the Isopata Tomb which is quite in agreement with the indications already referred to.

"From structural evidence," he writes, "we are on the whole justified in regarding the Knossos Tomb as of earlier date than any built tomb on the mainland at Mycenae or elsewhere." He notes as an early feature the absence of a lintel over the doorways as contrasted with the later work at Mycenae. He observes, however, that "it should be noticed in this connexion that the very timidity which restrained the Minoan builders from throwing a stone lintel across the full width of an opening (see entrances to sepulchral niches, Plates XCVI. XCVII.) made them adopt a door head with an attempt at an open arch, which ultimately became a more permanent form than the massive lintel with a relieving arch over it displayed at Mycenae.

It must also be borne in mind, as indicating a difference of date, that in its plan the Isopata Tomb is not a mere enlargement of that seen in the case of the chamber-tombs of the Late-Minoan Cemetery, but differs from this in some essential particulars. The fore-hall, with its side niches, and the niche at the back of the main chamber, are altogether divergent features. On the other hand, it is interesting to note that these very points show a curious conformity with the scheme of some typical Egyptian tombs belonging to the same approximate period as the earlier class of imported *alabaster* described above. An example of these from Hawara^a is given in fig. 147. We see here a sloping passage approached by a well or pit, which to a certain extent recalls the abrupt ascent at the upper end of the Isopata *dromos*. This leads to an antechamber, the sepulchral chamber itself, on the floor of which the sarcophagus had stood, while behind the chamber is a square niche. The whole is in this case cut out of the rock, and the mastaba or sepulchral chapel originally rose on the ground level above the chamber.

The parallelism here presented to the arrangement of the Minoan tomb

^a Petrie, *Kahun, Gurob, and Hawara*, plate vii. 9.

might suggest a suspicion that the early Egyptian influence on the sepulchral cult of prehistoric Crete went still further, and that the mound above the summit of the great chamber may have been here too crowned by some kind of *herôon* answering to the Egyptian chapel. A hint of some such sepulchral usage seems indeed to be supplied by the painted sarcophagus discovered by the Italian Mission at Hagia Triada.^a Upon this various ritual scenes are depicted, including the worship of the double-axe emblems of the divine pair of Minoan religion, in presence of a figure which has been recognised as that of the deceased person, who stands at the entrance of what may well have been some such sepulchral shrine.

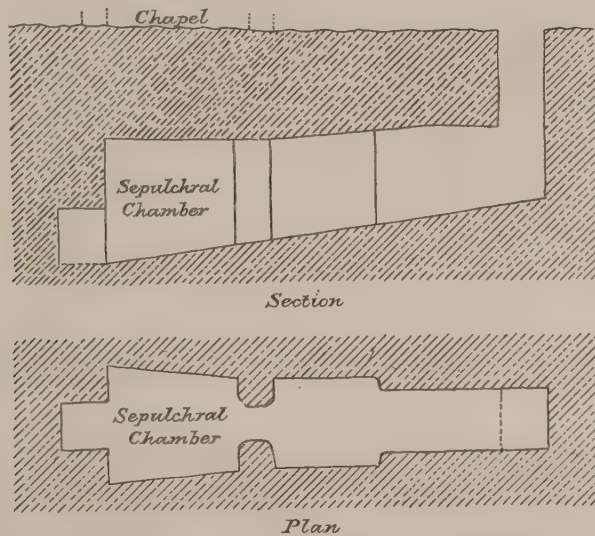


Fig. 147. Plan and section of a Twelfth Dynasty Egyptian tomb at Hawara (after Petrie).

In this connexion a special interest attaches to a passage of Diodorus, describing the traditional tomb of Minos near the Sicilian Minoa. The tomb, according to this account, was of a double nature, the actual sepulchre being below, while above it was reared a shrine of Aphrodite, for long a centre of Sicilian worship. The Aphrodite of Minos we now know. She is the Great Mother of prehistoric Knossos, lady alike of the double-axe, of the lion and of the dove, in some respects Rhea, in others the Aphrodite Ariadne of later cult.

^a *Lavori eseguiti dalla Missione Archeologica Italiana, etc. (Rendiconti della r. Acad. dei Lincei, xii. Luglio 1903).*

It is also worth noting that the story of the death of Minos in Sicily at the hands of King Kokalos is identical with that of Agamemnon at the hands of Clytemnestra, according to the version preserved by Æschylus. Both were murdered in their baths. When we remember that the receptacles of the dead in the Minoan chamber-tombs were often nothing else than clay baths, we have a very probable source for the genesis of both stories.

To resume. The earlier of the sepulchral relics found, the signs on the blocks, the character of the construction itself, and the remarkable conformity to the plan with rock tombs of the Twelfth Dynasty, all combine to indicate that the chamber-tomb of Isopata goes back to a period contemporary at least with the close of the Middle Empire in Egypt. In other words it was most probably built in the Third Middle Minoan Period.

The close of that period at Knossos was marked by a considerable catastrophe in the Palace, which was largely rebuilt and remodelled during the succeeding Late-Minoan Age. It looks as if towards the close of this later Palace Period the original grave cist, the contents of which had been already probably rifled and scattered about, had been once again made use of for an interment of some importance. The rough covering-slabs found certainly did not belong to the grave as first constructed, and were probably placed there after this second sepulture. To the interment of this Late-Minoan Age would naturally belong the fine painted vases in the Palace Style and the other contemporary objects enumerated.

Then came the still later violators of the grave, and the remains of the second interment were thrown about the floor of the chamber and elsewhere to mingle with the already scattered relics from the original deposit. At a still later period the whole vault was used for promiscuous sepulture, or possibly as a public ossuary.

The later history of the Royal Tomb in fact curiously reproduces that of the Palace itself and of its principal dependencies. Just as the once royal and seignorial halls were parcelled out and divided up by poorer denizens, so the spacious vault, originally we may believe constructed as a last resting-place for kings of Minoan stock, became in days of ruin and decline a common burial-pit:

Hoc miserae plebi stabat commune sepulchrum.

The size and conspicuous position of the Isopata tomb led me, when first it was opened, to make the suggestion that we might have here the legendary

resting-place of Idomeneus, the leader of the Cretan contingent of eighty ships against Troy, whose grave was pointed out near Knossos in Hellenic times together, close beside it, with that of his colleague and half-brother Meriones the son of Molos. According to Diodoros^a it was marked with this epitaph:

Κνωσίου Ἰδομενῆος ὄρα τάφον. Ἀντὰρ ἐγώ τοι
πλησίον ἱδρυμαι Μηριόνης ὁ Μόλου.

Idomeneus was the grandson of Minos, which would probably make him out too late in the series for the original occupant of the Isopata tomb. The later interment may be thought to be hardly important enough for so great a prince, yet there is always a possibility that in times of decline and perhaps of pressing danger the later scion may have found a resting-place in an ancestral vault. Indeed it is hard to imagine that the grave cist of this imposing tomb was used again for one who was not of some account. In spite of exhaustive researches no trace of any like built tomb could be found in the neighbourhood. A few metres to the south, however, there came to light a chamber-tomb cut in the rock, of somewhat irregular form, but containing fragmentary remains of painted vases in the Palace Style contemporary with those of the neighbouring vault. Could this otherwise quite isolated sepulchral chamber be the traditional tomb where Meriones was laid, hard by the resting-place of his half-brother?

Such questions may never be answered, but the possible survival here of local traditions cannot be gainsaid, especially when it is remembered that the later use of the vault went on apparently into the Geometrical Period. At any rate the site would have been specially appropriate for the tomb of the Cretan prince who led the largest naval contingent of any of those who took part in Agamemnon's expedition. As a matter of fact the height on which it stands directly overlooks the extensive maritime town of Knossos, the existence of which a little east of the present town of Candia has been ascertained by the researches of the last season. It seems, too, that the tomb lay close to the ancient roadline, bringing the Palace and inland town into communication with the port.

In the days when the summit of the great chamber, itself rising some three metres above the rock surface, was capped by a mound, and that perhaps in turn surmounted by a *stela* or *herôon*, it must have been a most conspicuous landmark.

^a V. 79, 4.

The panorama from the plateau of the tomb is certainly the most extensive of any in the neighbourhood of the ancient Knossos, though the Palace itself in its somewhat low-lying basin is shut off by a nearer hill. The eye ranges from the snow-clad ridge of Ida to that of Dicta, with the pyramid of the Cretan Stromboli rising to the west and that of Mount Juktas, the site of the traditional tomb of Zeus, immediately to the south. The view takes in alike the Venetian walls of Candia and the site of the Minoan port, while to the north it extends far across the Ægean waters from the near lying island of Dia, the stranding-place of Ariadne, to where on clear days Melos and the volcanic cliffs of Santorin are faintly discernible.

INDEX.

A.

- Abbiss, John, rector of St. Bartholomew the Great, 390
- Abergavenny, Lord, residence of, 386
- Abydos, alabaster vase from, 536, 537, 538
- Acworth, Roger, 22
- Adze or chisel, bronze, from Knossos, 440
- Agate bead with intaglio, from Knossos, 442, 449
- Aix-la-Chapelle, coin preserved at, 246; crystal intaglio of the Carolingian period at, 33
- Alabaster objects: bowl, from Knossos, 531; object of uncertain use, from Knossos, 544; vases, from Abydos, 536, 537, 538, Enkomi, 538, Gournia, 537, Knossos, 532, 536-539, 554, 555, Mycenae, 536; whorl, from Knossos, 470
- Alexander V., Pope, grant of indulgences by, 380
- Aleyn, John, chancery proceedings against, 12
- Alfun, deputy master of St. Bartholomew's Hospital, 378
- Altar, Roman, from Caerwent (Mon.), 308; Silchester (Hants.), 357
- Alton (Hants.), deed relating to, 259
- Amesbury Priory (Wilts.), grant to, 75, 76; unrecorded prioress of, 75
- Amethyst beads from Knossos, 470, 471, 482
- Amiens (France), sculpture at, 175, 182, 183
- Andover, John and Parnell, deed of, 263
- Andwell (Hants.), lease to the prior of, 278
- Angels, the nine orders of, on front of Wells cathedral, 145, 162, 186
- Angers (France), sculpture at, 176, 182
- Animal remains: from Caerwent (Mon.), 100, 103, 110, 304, 309; Knossos, 456, 457, 504; Mycenae, 457; Sierra Morena (Spain), 327; Silchester (Hants.), 369
- Annunciation, the, on a wall painting, 371
- Antioch, coins of, 254
- Anvil, iron, found at Caerwent (Mon.), 96
- Apostles, the twelve, on front of Exeter cathedral, 151: on front of Wells cathedral, 145, 164
- Apulia, well-cave tombs in, 407
- Aquabella (Savoy), effigy at, 62
- Architectural remains, Roman, from Cástulo (Spain), 316, 317; Caerwent (Mon.), 88, 89, 92, 93, 94, 100, 107, 118, 119, 294, 295, 299, 301, 303, 304, 305, 307; Linares (Spain), 311; Silchester (Hants.), 342, 357
- Arden, Sir Walter, effigy of, 63
- Argonaut, on gold beads from Knossos, 416, 448, 520
- Argos, necklace of gold beads from, 416, 466
- Arms and armour: arrow heads, bronze, from Knossos, 421, 422, 504, Mycenae, 421, Phaestos, 421; daggers, bronze, from Athens, 475, Dictaeon Cave, 504, Knossos, 426, 433, 458, 471, 472, 473, 474, 495, 497, 503, Pantalica (Sicily), 504; Valledolmo (Sicily), 504; hauberk of chain mail and its conventional representations, J. G. WALLER, F.S.A., on, 57; helmets, Assyrian, 70, Roman, bronze, from Sierra Morena (Spain), 327; spearheads, bronze, from Ialysos, 504, Knossos, 405, 426, 433, 441, 445, 456, 466, 467, 495, 504; iron, from

Arms and armour—*continued*.

- Caerwent (Mon.), 306; swords, bronze, from Gezer (Palestine), 497, Ialysos, 501, Knossos, 402, 405, 442, 445, 447, 448, 450, 452, 456, 477, 495-503, Muliana, 502, 503, Mycenae, 495, 496, 497, 498, 500, 501, Phaestos, 444, 496
- Arrowheads, bronze, from Knossos, 421, 422, 504; Mycenae, 421; Phaestos, 421
- Artsà (Crete), clay chest or larnax from, 400
- Ascension, the, on a wall painting, 371
- ASHBY, T., junior, D.Litt., F.S.A., on excavations at Caerwent (Mon.), in the year 1904, 289
- ASHBY, T., junior, M.A., F.S.A., HUDD, A. E., F.S.A., and MARTIN, A. T., M.A., F.S.A., on excavations at Caerwent (Mon.) in 1901-3, 87
- Assumption, the, on a wall painting, 371
- Assyria, helmet from, 70
- Aston (Warw.), effigy at, 63
- Athens, bronze dagger from, 475
- Auxerre (France), story of St. Eustace in glass at, 170
- Aynho, Agnes and Guy, 274

B.

- Bacun, John, prior of St. Bartholomew, 390
- Baetica (Spain), Roman mining operations in, HORACE SANDARS on, 311
- Bagge, Halvor, 392
- Baños (Spain), church of San Juan at, 39
- Baptism, the, on a crystal intaglio, 33
- Barbour, Thomas, mortgage by, 270
- Barham (Suffolk), chancery proceedings relating to, 18
- Baron, William, 22
- Barrels, wooden, found on site of Newgate prison, 138
- Barrett, Charles, 387; Sir Edward, residence of, 387

- Basingstoke (Hants.), deeds relating to, 270, 271, 272
- Basons, bronze, from Knossos, 426, 429, 431, 511, Phaestos, 429; Purbeck marble, from Silchester (Hants.); 344, 346; stone, from Cilurnum, 344, Knossos, 479, 509
- Bas-relief, Roman, from Linares (Spain), 311, 321
- Bateman, Richard Thomas, rector of St. Bartholomew the Great, 390; Thomas, chancery proceedings by, 12
- Baxter, Edmund, 15
- Bayly, William, chancery proceedings against, 17
- Beads: agate, from Knossos, 442, 449; amethyst, from Knossos, 470, 471, 482; bronze, from Knossos, 479; clay, from Knossos, 412, 413; cornelian, from Knossos, 414, 442, 449, 469, 471, 479, 482; crystal, from Knossos, 449, 470, 475, 476, 479, 533, 543; glass, from Knossos, 412, 413, 461, 462, 473, Milatos, 485, 493; gold, from Argos, 416, 466, Knossos, 415, 416, 442, 448, 449, 461, 466, 479, 519, 520, 521, Mycenae, 416, 448, 466; Phaestos, 416, 448, 461, 466; ivory, from Knossos, 479; lapis lazuli, from Knossos, 531, 534, 541; moulds for gold, 416, 466; paste, from Knossos, 412, 413, 439, 449, 461, 462, 463, 466, 470, 473, 480, 482, Mycenae, 416, Phaestos, 541; onyx, from Knossos, 442, 449; steatite, from Knossos, 415, 441, 533
- Beaumont, Viscount, brass to, 73
- Beel, Amice and James del, deed of, 264
- Belamy, John, 22
- Bell, bronze, Roman, found in the Sierra Morena (Spain), 327
- Bells, church, London, St. Bartholomew the Great, 389, St. Sepulchre, 389
- Belmeis, Richard, bishop of London, 376
- Beneyt, John, 262, 274; Margery, grant to, 262
- Bennebury, John, 81
- Berlin museum, mould for gold bead in, 416

- Bernhard of Breydenbach, account of one of the thirty pieces of silver by, 248
- Besonthyn, Nicoll, chancery proceedings by, 15
- Besynby, John and Isabell, chancery proceedings by, 16
- Binks, Robert, rector of St. Bartholomew the Great, 390
- Bischof, John, grant to, 261
- Bit, horse's, iron, found at Caerwent (Mon.), 96
- Blaunder, Joan, chancery proceedings by, 2
- Bledcumbe, Agnes, 77, 78; Richard de, 78
- Boars' tusks, from Knossos, 456, 457, 504; Mycenae, 457
- Boat, ivory, from Knossos, 415, 416
- Bolte, Richard, chancery proceedings against, 18
- Bolton, William, prior of St. Bartholomew, 386, 390
- Bone objects: counters, from Caerwent (Mon.), 309; comb, from Knossos, 465, 470, 505; handle, from Caerwent, 295; pins, from Silchester (Hants.), 356; spindle whorl, from Knossos, 467, 468; stud, from Knossos, 464, 465
- Borough, Robert, chancery proceedings by, 6
- Boteler, Philip, 16
- Bottle, glass, from Knossos, 461, 462
- Bourges (France), sculpture at, 182
- Bowman, William, 22
- Bowls, alabaster, from Knossos, 531, 532, 538, 539; bronze, from Knossos, 477, 479, 508; diorite, from Knossos, 541, 555; porphyry, from Knossos, 531, 536, 555
- Bowreman, William, chancery proceedings by, 5
- Box, wooden, with bone inlays, from Knossos, 426, 434
- Bracelet, bronze, from Knossos, 475, 482
- Brandsburton (Yorks.), brass at, 72
- Brasses, monumental at Brandsburton (Yorks.), 72, Bray (Berks.), 73, Chartham (Kent), 72, Little Horkesley (Essex), 72, Sefton (Lanc.), 74, Wivenhoe (Essex), 73; of Sir John Daubernoun, 58, Sir Hugh Hastings, 58, Sir Roger Trumpington, 58, Sir John Wanton, 58, Willem Wenemaer, 69
- Bray (Berks.), brass at, 73
- Bream (Somerset), manor of, 274
- Brenan, Robert, chancery proceedings by, 15
- Brewere, John, will of, 266
- British Museum, crystal of Lothair in, 25; crystal intaglios of the Carlovingian period in, 33
- Brokhurst, Cristine and William, grant to, 258
- Bronze objects: arrowheads from Knossos, 421, 422, 504, Mycenae, 421, Phaestos, 421; basons, from Knossos, 426, 429, 431, 511, Phaestos, 429; bead, from Knossos, 479; bell, from Sierra Morena (Spain), 327; bowls, from Knossos, 477, 479, 508; bracelets, from Knossos, 475, 482; brooches, from Caerwent (Mon.), 115, 303, Mulianà, 492, 502, Mycenae, 448, 521, 522; cauldrons, from Knossos, 426, 432, 433, 509; chisel or adze, from Knossos, 440, 467, 468; cups, from Knossos, 426, 433; daggers, from Athens, 475, Dictaeon Cave, 504, Knossos, 426, 433, 458, 471-474, 495, 497, 503, Pantalica, 504, Valledolmo, 504; ewers, from Knossos, 405, 426, 433, 441, 444, 508; helmet, Roman, from Sierra Morena (Spain), 327; jugs, from Hagia Triada, 430, Knossos, 426, 430, 441, 509, Palai-kastro, 430, Phaestos, 431; knives, from Ialysos, 504, Knossos, 391, 411-413, 415, 421, 423, 424, 426, 433, 435, 450, 452, 454, 456, 458, 459, 460, 466-470, 472, 473, 495, 504; ladle, from Knossos, 426, 433; lamp, from Knossos, 426, 430, 508; mirrors, from Knossos, 392, 405, 415, 416, 426, 441, 445, 461-468, 473-475, 477, 480, 505, 533, 545, 555; needle, from Knossos, 439, 466; pans, from Knossos, 405, 426, 429, 441, 444, 508, Mycenae, 429, Phaestos, 429, 444, 508; pins, from Knossos, 415, 423, 440; plaques or silversmith's models, 85; pointed instrument, from Knossos, 469, 470; pots, from Knossos, 426, 432; razors, from Ialysos, 507, Knossos, 413,

Bronze objects—continued.

- 421, 426, 433, 436, 437, 439, 440, 449, 450, 452, 454, 459, 460, 464, 466, 467, 469, 477, 505, Mycenae, 434, 506, 507, Phaestos, 506; rings, from Caerwent, 103, 108; Knossos, 465, 466, 482; saws, from Gournia, 440, Hagia Triada, 440, Knossos, 440, 504; spearheads, from Ialysos, 504, Knossos, 405, 426, 433, 441, 445, 456, 466, 467, 495, 504; swords, from Gezer (Palestine), 497, Ialysos, 501, Knossos, 402, 405, 442, 445, 447, 448, 450, 452, 456, 477, 495-503, Mulianà, 502, 503, Mycenae, 495, 496, 497, 498, 500, 501, Phaestos, 444, 496; tripods, from Enkomi, 392, Knossos, 392; tweezers, from Knossos, 392, 465, 505; vases, from Knossos, 477, 479, Phaestos, 479
- Brooches, bronze, from Caerwent (Mon.), 115, 303; Mulianà, 492, 502; Mycenae, 448, 521, 522
- Broughyng, Edmund de, prior of St. Bartholomew, 390
- Bubwith, Nicholas, bishop of Bath and Wells, work of, at Wells, 161
- Buckets, copper, Roman, from mines in Spain, 330, 331, 332; wooden, from Caerwent (Mon.), 110
- Bullesdon, Thomas, bellfounder, 389
- Burgess, Anthony, rector of St. Bartholomew the Great, 390
- Burnham (Somerset), manor of, 274
- Bysney, Miles, chancery proceedings against, 11

C.

- Caerwent (Mon.), excavations at, on the site of the Romano-British city of Venta Silurum, in 1901-3, T. ASHBY, jun., M.A., F.S.A., A. E. HUDD, F.S.A., and A. T. MARTIN, M.A., F.S.A., on, 87; in 1904, T. ASHBY, jun., D.Litt., F.S.A., on, 289; altar,

Caerwent—continued.

uninscribed, from, 308; amphitheatre and buildings, 104; animal remains from, 100, 103, 110, 304, 309; architectural remains from, 88, 89, 92, 93, 94, 100, 107, 118, 119, 294, 295, 299, 301, 303, 304, 305, 307; bone objects from, 295, 309; bronze objects from, 103, 108, 115, 303; buildings in the school playground, 113; coins from, 110, 123, 295, 296, 300, 303, 308; drains at, 93, 100, 102, 103, 106, 108, 111, 116, 122, 295, 296, 297, 305; enamelled object from, 108; excavations in the church path, 122; excavations on the village green, 115; graves of infants at, 292; hearths or furnaces at, 103, 110, 111, 300, 307, 308; house No. I N, description of, 100, No. II N, 97, No. III N, 101, No. IV N, 103, No. V N, 106, No. VI N, 111; No. VII N, 112, No. VIII N, 109, No. IX N, 114, No. X N, 114, No. XI N, 115, No. X., 290, No. XI., 291, No. XII., 297, No. XIII., 307; human remains from, 101, 110, 119, 292, 300; hypocausts at, 97, 100; inscriptions from, 119-122, 293; iron objects from, 93, 96, 101, 103, 106, 109, 114, 115, 306, 309; Kimmeridge shale object from, 290; latrines at, 114, 298, 304; lead object from, 103; mill-stones from, 103, 105, 111, 114, 115; mortars, stone, from, 112, 305; mosaic pavements at, 97, 98, 99, 100, 109, 295, 301, 304; north gate and buildings adjacent, 87; pits at, 104, 106, 111, 290, 297, 302; plan showing discoveries to 1903, 124, to 1904, 310; plant remains of, 110, 123, 308, 309; platform on village green, 116; potters' marks from, 297, 302; pottery from, 103, 104, 108, 110, 111, 112, 114, 123, 291, 295, 297, 300, 302, 303, 308, 309; road to the south gate, 309; surgical instrument from, 114; threshold stones from, 101, 102, 104; tile, flanged, from, 109; tile flue at, 306;

Caerwent—continued.

- wall plaster from, 97, 99, 107, 111, 112, 114, 115, 123, 298, 301, 304, 305; wells, stone lined, at, 96, 100, 103, 110, 112, 295, 309; wooden bucket from, 110; wooden pipes with iron collars from, 93, 115
- Canterbury Cathedral, figures of the Virtues in, 178; painting of the story of St. Eustace in, 170
- Caoursin, Guill., account of one of thirty pieces of silver by, 248
- Cape, Thomas, chancery proceedings by, 3
- Carcassonne (France), incised slab at, 59
- Carey, Sir Henry, residence of, 387
- Carleton, John de, prior of St. Bartholomew, 390
- Carloman, King of France, seal of, 33
- Carvajal, Cardinal Bernardin de, 249
- Casket lid, ivory, from Knossos, 426, 434
- Cástulo (Spain), Roman remains at, 316, 317, 318
- Cauldrons, bronze, from Knossos, 426, 432, 433, 509
- Cawon, William, lease by, 278
- Cecil, Sir William, letter to, 384
- Celestinus III., Pope, bull of, relating to the priory of St. Bartholomew, Smithfield, 376
- Centenillo mine, near La Carolina (Spain), 322; Roman remains from, 323, 324, 325, 331
- Cessyngham, Richard, chancery proceedings against, 6
- Chafing pans, clay, from Knossos, 418, 439, 475, 477
- Chamberlayne, John, chancery proceedings against, 3, 7; Sir Robert, monument to, 386; Thomas, deed of, 80
- Chancery Proceedings of the fifteenth century, C. TRICE MARTIN, B.A., F.S.A., on, 1; classes of petitions to the chancellor, 1; petitions relating to action of trespass against children, 18; alderman's commandment in the city of London, 2, 3; Barham (Suffolk), 18; clergy, 15; deten-

Chancery Proceedings—continued.

- tion of deeds, 17; escheator's extortion, 13; a father's will, 16; Guildford (Surrey), 7; Hereford, 14; horse racing, 11; Ilchester (Somerset), 7; jurors supplied with food, 12; Leasingham (Linc.), 15; Maldon (Essex), 6; marriage, 19; the Marshalsea, 4; Pershore Abbey (Worc.), 20; ransom from the French, 8; rood at St. Paul's, 18; trial by jury, 9, 12; wager of law, attain of jury, 3; York city, 6; York, Holy Trinity priory, 21, 23
- Charles the Bald, King of France, gift of gems to, 34; seal of, 33
- Charles the Fat, King of France, seal of, 33
- Charles the Simple, King of France, seal of, 33
- Chartham (Kent), brass at, 72
- Chartres (France), sculptures at, 175, 178, 181, 182, 183; story of St. Eustace in painted glass at, 170
- CHEALES, Rev. HENRY JOHN, M.A., on the wall paintings in Friskney church (Linc.), 371
- Chedworth (Glouc.), Roman remains at, showing traces of fulling works, 210
- Cheltenham, John, prior of Pershore, chancery proceedings against, 20
- Chests, clay, or larnakes, from Artsà, 400; Hagia Triada, 490; Knossos, 396, 398, 399, 400, 405, 417-420, 422, 424, 435, 437, 439, 440, 449, 454, 455, 457, 458, 466, 469, 470, 473, 476, 477, 480; Ligortino, 400, 417; Milatos, 484, 485, 488, 491; Mulianà, 493; Palai-kastro, 400, 490; Phaestos, 417
- Chilmark, Joan de, grant by, 261; William de, 261
- Chisel or adze, bronze, from Knossos, 440, 467, 468
- Cilurnum, stone basin from the baths at, 344; warm air conduit in baths at, 351
- Claybruk, Richard, 21, 22
- Clehonger (Hereford), effigy at, 63
- Clifford, Richard, bishop of London, 378

- Clopton, Stephen of, benefactor to St. Bartholomew's priory, 379
- Coins: Egyptian, of The Sultan El Ashraf, 250; Greek, of Antioch, 254, Rhodes, 246, 249, 251, 252, Syracuse, 250, Tyre, 253, 254; Jewish shekel, 253; Roman, from Caerwent (Mon.), 110, 123, 295, 296, 300, 303, 308, Centenillo mines (Spain), 324, 331, London, Newgate, 139, Silchester (Hants.), 354, 357, of Emperor Tiberius, 253, of Emperor Zeno, 250; The Thirty pieces of Silver, G. F. HILL, M.A., on, 235
- Cok, Thomas, chancery proceedings against, 5
- Coke, Nicholas, chancery proceedings by, 14
- Colier, Reginald, prior of St. Bartholomew, 390
- Collars, iron, for wooden pipes, from Caerwent (Mon.), 93, 94, 115
- Comb, bone, from Knossos, 465, 470, 505
- Conques (France), intaglio of the Carolingian period at, 33
- Conveyancing, notes on fourteenth century, by T. F. KIRBY, M.A., F.S.A., 255; alienation of land by will, 266; devise of lands by will, special custom of, 268; feoffments, 256, 257; fines, 264; grants in fee simple, 257, to religious house to endow obit, 260, in free alms, 261, in frank marriage, 261, of life annuity, 262, to feoffees, 267; indented deeds, 259; indenture of sale of house, 259, of perpetual rent, 262, of messuage, 263, of exchange, 271; leases, 275; livery of seisin, 256; married women, local custom with regard to estates of, 265, 266; mortgages, 269; settlements, 267, 272
- Coombe Bissett (Wilts.), deeds relating to, 256, 264
- Cope, Isabel, 388; Sir Walter, 388
- Copper objects: buckets from Roman mines in Spain, 330, 331, 332; jugs, from Mycenae, 431, 509; razor, from Egypt, 507
- Cordova (Spain), Roman copper mine near, 314, 315
- Cornelian beads from Knossos, 414, 442, 449, 469, 471, 479, 482
- Counters, bone, from Caerwent (Mon.), 309
- Court, Richard, 14
- Courtes, cemetery at, 405
- Coventre, William, prior of St. Bartholomew, 381, 390
- Cramps, iron, from Silchester (Hants.), 360
- Cran, Hugh, will of, 268
- Crosby, Sir John, effigy of, 66
- Crouchston, —, fellow of Winchester College, 257
- Crucifixion, the, on crystal intaglios, 33
- Crudeshall, John, 81
- Crystal objects: beads, from Knossos, 449, 470, 475, 476, 479, 533, 543; crystal of Lothair, O. M. DALTON, M.A., F.S.A., on, 25; intaglios of the Carolingian period, 33; pendants, from Knossos, 475, 476, 479; sword pommel, from Knossos, 533, 543, 555; use of crystal in early times, 34; whorls, from Knossos, 533, 544
- Culleo, Quintus Thorius, inscription relating to repair of roads by, 318
- Cullyng, Robert, chancery proceedings against, 5
- Cups, bronze, from Knossos, 426, 433; silver, from Knossos, 533, 545; standing, silver-gilt, with arms of William the Silent, 83; steatite, from Knossos, 453, 454, 466
- Cusson, Adam and John, 15
- Cylinder of Egyptian porcelain from Knossos, 461, 462
- Cyprus, early Copper Age cemeteries in, 401

D.

- Dagger handle, ivory, from Knossos, 433
- Daggers, bronze, from Athens, 475; Dictaeon cave, 504; Knossos, 426, 433, 458, 471, 472, 473, 474, 495, 497, 503; Pantalica, 504; Valledolmo, 504

DALTON, ORMONDE M., M.A., F.S.A., on the crystal of Lothair, 25
 Darcy, Martin, chancery proceedings by, 15
 Darenth (Kent), Roman remains at, showing traces of fulling works, 219
 Daubernoun, Sir John, brass of, 58
 David, King, and the prophets, on a wall painting, 371, 374
 Deane, John, rector of St. Bartholomew the Great, 389, 390
 Dee, David, rector of St. Bartholomew the Great, 390; chancery proceedings by, 384, 385
 Deers' horn, from Caerwent (Mon.), 304
 De Mauley family, effigy of a knight of, 63, 64
 Dernton, Thomas, 22, 23
 Desford, John and Richard, chancery proceedings by, 18
 Dewe, John, 21
 Dictæan cave, bronze dagger from, 504
 Diodorus Siculus, account of the tin trade in Britain by, 282
 Dionysius of Telmahar, chronicle of, 237
 Diorite bowl, from Knossos, 541, 555
 Doctors of the church and the Pope, on a wall painting, 371, 374
 Dodford (Northants.), effigy at, 68, 69
 Drapar, Simon, deed of, 260
 Draycote, Robert, chancery proceedings by, 17
 Duc, Peter le, prior of St. Bartholomew, 390
 Durrington (Wilts.), records of the manor of, T. F. KIRBY, M.A., F.S.A., on, 75
 Dyconson, Thomas, chancery proceedings against, 9

E.

Ear-ring, gold, Roman, from Silchester (Hants.), 366
 Ebros (Spain), Roman remains at, 321
 Edwardes, Owen Perrott, rector of St. Bartholomew the Great, 390

Effigies: at Aquabella (Savoy), 60; Aston (Warw.), 63; Clehonger (Hereford), 63; Dodford (Northants.), 68, 69; Horley (Surrey), 72; Llanarmon-in-Yale (co. Denbigh), 65; Newton Solney (Derby), 67, 68, 69; Paris, 63; Pickering (Yorks.), 64; Tewkesbury (Glouc.), 68, 69; Tollard Royal (Wilts.), 68; York Minster, 63, 64
 Egypt, alabaster vases from, 536-539; copper razor from, 507; porcelain cylinder from, 461, 462; scarab from, 479, 516
 Eilbert, Count, story of his ownership of the crystal of Lothair, 35
 El Ashraf Salah-al-din Khalil, Sultan of Egypt, coin of, 250
 Ellisfield (Hants.), deed relating to, 273, 276
 Ely, Richard of, bishop of London, 378
 Enamelled rosette from Caerwent (Mon.), 108
 Enghein, coin preserved at, 249, 250
 Enkhuyzen, view of the town of, on a silver gilt cup, 83; sea fight off, 84
 Enkomi (Cyprus), alabaster vase from, 538; bronze tripod from, 392
 Escures, Matthew de, deed of, 271
 Esthawe, Thomas, chancery proceedings by, 8
 Evangelists, the four, on front of Exeter Cathedral, 151
 EVANS, ARTHUR J., Litt.D., F.R.S., F.S.A., on the prehistoric tombs of Knossos, 391
 Ewer, bronze, from Knossos, 405, 426, 433, 441, 444, 508
 Exeter Cathedral, figures of the Virtues at, 178; images on the west front of, 151
 Eyton, *alias* Repyngdon, John, prior of St. Bartholomew, 390

F.

Fabri, Felix, account of the thirty pieces of silver by, 243, 248
 Fauconbridge, Eustace of, bishop of London, 378

- Feghelere, John, bequest to, 73
 Fernham (Hants.), manor of, 80
 Fidyll, Peers, chancery proceedings against, 12
 Fitzhugh, Robert, bishop of London, ordinance of, 381
 Fitzwilliam, John, 77
 Fleming, Caleb, presbyterian divine, 387
 Floc, Osbert, deed of, 262
 Florence, the Annunziata, coin preserved at, 246; S. Croce, coin preserved at, 246
 Forceps, surgeon's, from Caerwent (Mon.), 114
 Forde, Alice and Richard atte, deed of, 277
 Forester, John, deed of, 267
 Forster, John, marshal of the Marshalsea, 5
 FOX, GEORGE E., Hon.M.A.Oxon., F.S.A., on some probable traces of Roman fulling in Britain, 297
 FOX, GEORGE E., Hon.M.A.Oxon., F.S.A., and HOPE, W. H. ST. JOHN, M.A., on excavations on the site of the Roman city at Silchester (Hants.) in 1903 and 1904, 333
 Foxley, Sir John, brass to, 72; will of, 72, 73
 Franklin, Benjamin, 388
 Friskney (Linc.), wall paintings in the church of, Rev. H. J. CHEALES, M.A., on, 371
 Friskney, Walter of, judge of the King's Bench, 374
 Frog, lapis lazuli pendant in form of, from Knossos, 531, 543
 Fuller, Robert, prior of St. Bartholomew, 390
 Fulling, Roman, some probable traces of, in Britain, GEORGE E. FOX, Hon. M.A. Oxon., F.S.A., on, 207; at Chedworth (Glouc.), 210; Darenth (Kent), 219; Pompeii, 207, 208, 209, 210; Titsey (Surrey), 214
 Furnace, closed, found at Caerwent (Mon.), 300, 308
 FYFE, D. THEODORE, note on the architectural details of the Isopata tomb, 551
 Fyfhide, William, deed and seal of, 273
- G.
- Garland, John, chancery proceedings against, 21, 23
 Garnesey, John, chancery proceedings against, 13
 Garrett, John, rector of St. Bartholomew the Great, 390
 Gedeney, William, prior of St. Bartholomew, 390
 Gelle, John and Thomas, 15
 Gems, engraved, of the Carolingian period, 33; from Knossos, 442, 449, 477, 479, 496, 519
 Gerard, prior of St. Bartholomew, 390
 Gezer (Palestine), bronze sword from, 497; pottery from, 497
 Ghent, brass at, 69
 Glass objects: beads, from Knossos, 412, 413, 461, 462, 473, Milatos, 485, 493, Mycenae, 416; bottle, from Knossos, 461, 462; window glass, Roman, from Silchester (Hants.), 361
 Godfrey of Viterbo, account of the thirty pieces of silver by, 235
 Gold objects: beads, from Argos, 416, 466, Knossos, 415, 416, 442, 448, 449, 461, 466, 473, 479, 519, 520, 521, Mycenae, 416, 448, 466, Phaestos, 416, 448, 461, 466; cup, standing, belonging to the Duke of Portland, 233; ear-ring, Roman, from Silchester (Hants.), 366; handle, from Mycenae, 513; pins, from Knossos, 531, 541, Silchester, 366; plates, from Mycenae, 416, 521; rings, from Knossos, 412, 413, 415, 416, 437, 461, 466, 473, 477, 479, 490, 519; sword mountings, from Knossos, 405, 442, 445, 446, 447
 Gondrey, Thomas, 388
 Gould, John, chancery proceedings by, 3
 Gournia, alabaster vase from, 537; bronze saws from, 440; pottery from, 510, 555

Grafton (Northants.), manor of, 80
 Gregoriou, Antonios, 392
 Grey, John, chancery proceedings against, 7
 Grindal, Edmund, bishop of London, letter of, 384
 Guildford (Surrey), chancery proceedings relating to, 7
 Guy, William, prior of St. Bartholomew, 390
 Gybson, Joan, chancery proceedings against, 9; Robert, 9, 10; Thomas, 10
 Gyffard, John, 78
 Gyles, Sir Thomas, 21
 Gypsum, lamps of, from Knossos, 540

H.

Hadam, Guy, chancery proceedings by, 12
 Hagia Paraskevè, cemetery of, 405
 Hagia Triada, bronze jug from, 430; bronze saw from, 440; clay chest or larnax from, 490; pottery from, 510
 Hagno, master of St. Bartholomew's Hospital, 378
 Hales, Sir John, prior of Clerkenwell, 381
 Halyday, Nicolas, 21, 22
 Hammers, stone, from Roman mines in Spain 329
 Handle, bone, from Caerwent (Mon.), 295; gold, from Mycenae, 513
 Hannibal, marriage of, 319; mines belonging to, in Spain, 319
 Harewell, John, bishop of Bath and Wells, work of, at Wells, 161
 Harre, Adam and Alice le, lease to, 280
 Harrison, Randolph, rector of St. Bartholomew the Great, 390
 Hart, Sir Percival, residence of, 386
 Harvy, John, 15
 Hastings, Sir Hugh, brass of, 58
 Hauberk, chain mail, and its conventional representations, J. G. WALLER, F.S.A., on, 57
 Hawara (Egypt), tomb at, 558
 Head, stone, from site of Newgate prison, 139
 Hearths or furnaces, at Caerwent (Mon.), 102, 110, 111, 300, 307; Knossos, 426, 429, 533, 546, 554; Silchester (Hants.), 335, 336
 Helmet, Assyrian, 70; Roman, bronze, from Sierra Morena (Spain), 327
 Henege, John, deed and seal of, 80
 Henry, prior of St. Bartholomew, 390
 Heraldry: arms of hospital of St. Bartholomew, Smithfield, 376; La Warre, 79; Neville, 79; priory of St. Bartholomew, 376; William the Silent, 83
 Hereford, chancery proceedings relating to, 14
 Hert, Edmond, abbot of Pershore, chancery proceedings against, 21; Richard, 15
 Hethe, Joan, John, and Maud atte, grant to, 277
 Highclere (Hants.), deed relating to, 257.
 HILL, ARTHUR G., M.A., F.S.A., on some Post-Visigothic churches in Spain, 39
 HILL, G. F., M.A., on the thirty pieces of silver, 235
 Himilce, wife of Hannibal, 319
 Hogarth, D. G., 391, 392
 Hogenberg, Francis, engraving by, 85
 Hones, stone, from Knossos, 411, 412, 436, 449, 450
 HOPE, W. H. ST. JOHN, M.A., on the imagery and sculptures on the west front of Wells cathedral church, 143
 HOPE, W. H. ST. JOHN, M.A., and FOX, GEORGE E., Hon.M.A.Oxon. F.S.A., on excavations on the site of the Roman city at Silchester (Hants.) in 1903 and 1904, 333
 Horkesley, Little (Essex), brass at, 72
 Horley (Surrey), effigy at, 72
 Hornblynke, Robert, 15
 Hornija (Spain), church of San Ronan at, 39
 Horse racing, the subject of chancery proceedings, 11
 Host, the, Jews stabbing, on wall painting, 371; king doing homage to, on wall painting, 371
 Hous, Piers, chancery proceedings against, 5, 6

- Howden (Yorks.), figures on the screen at, 174
- Huby, Robert, prior of Holy Trinity, York, chancery proceedings by, 21, 23
- HUDD, A. E., F.S.A., ASHEY, T., jun., M.A., F.S.A., and MARTIN, A. T., M.A, F.S.A., on excavations at Caerwent (Mon.) in 1901-3, 87
- Hudson, Adam, 21
- Hugh, prior of St. Bartholomew, 390
- Human remains: from Caerwent (Mon.), 101, 110, 119, 292, 300; Knossos, 392, 395, 396, 398-400, 404, 411-415, 421-424, 426, 435-442, 449, 450, 452-462, 464-467, 469-473, 475-478, 480, 526, 527, 530, 534; Milatos, 488
- Hunt, John, bond of, 275
- I.
- Ialysos, bronze objects from, 501, 504, 507; pottery from, 505
- Ictis, the Island of, CLEMENT REID, F.R.S., on, 281
- Idomeneus, tomb of, 561
- Ilchester (Somerset), chancery proceedings relating to, 7
- Incised marks on tombs at Knossos, 403, 437, 556
- Incised slab at Carcassonne (France), 58, 59
- Ingepenne, Isabel, Margery, Richard, and Roger, 268
- Inscriptions: consecration, in church of Santiago de Peñalva (Spain), 56; foundation, of church of San Pedro de Montes (Spain), 54, of Santa Maria, Naranco (Spain), 42; on altar piece in church of Santa Cristina, Lena (Spain), 50; on crystal intaglio at Aix-la-Chapelle, 33; on crystal of Lothair, 26, 27; on silver cup, 83, 84; on tombstones in church of Santiago de Peñalva (Spain), 55, 56; Roman, from Caerwent (Mon.), 119, 120-22, 293, Cástulo (Spain), 318, Centenillo mines (Spain), 325, 327, Seville (Spain), 319

- Iron objects: anvil, from Caerwent (Mon.), 96
bit, horse's, from Caerwent, 96; collars for wooden pipes, from Caerwent, 93, 94, 115; cramps, from Silchester (Hants.), 360; mass of, from drain at Silchester, 351; mining tools, from Spain, 328, 329; nails, from Caerwent, 309; padlock, from Caerwent, 109; pickaxe, from Caerwent, 103; socket for gate pivot, from Caerwent, 101; spade sheath, from Caerwent, 106; spearhead, from Caerwent, 306
- Irreverent woman, the, on a wall painting, 371
- Isopata, the royal tomb of, 526; architectural details of, 551; discovery and excavation of, 526; general conclusions regarding, 554; objects found in, 536
- Ivory objects: bead, from Knossos, 479; boat, from Knossos, 415, 416; casket lid, from Knossos, 426, 434; dagger handle, from Knossos, 433; knife handle, from Knossos, 424; mirror handles, from Knossos, 435, 453, 494, 505, 533, 545; sword pommel, from Knossos, 405, 442, 445; wing of sphinx, from Mycenae, 505

J.

- Jarvais, Arthur, residence of, 386
- Jewellery from Knossos, 519, 520, 521
- Jews stabbing the Host, on a wall painting, 371
- John, prior of St. Bartholomew, 390
- John of Hildesheim, account of the thirty pieces of silver by, 239, 240
- Joscelin, bishop of Bath and Wells, work of, at Wells, 165
- Judas Iscariot, medallion portrait of, 249
- Jugs, bronze, from Hagia Triada, 430, Knossos, 426, 430, 441, 509, Palaikastro, 430, Phaestos, 431; copper, from Mycenae, 431, 509

K.

- Kechyn, Thomas, 20
- Kensington, John de, prior of St. Bartholomew, 390
- Kimmeridge shale objects from Caerwent (Mon.), 290
- King doing homage to the Host, on a wall painting, 371
- Kingsclere (Hants.), deeds relating to, 258, 269, 277
- KIRBY, T. F., M.A., F.S.A., on the records of the manor of Durrington (Wilts.), 75; on fourteenth century conveyancing, 255
- Knife handle, ivory, from Knossos, 424; wood, from Knossos, 469, 470
- Knives, bronze, from Ialysos, 504; Knossos, 391, 411-413, 415, 421, 423, 424, 426, 433, 435, 450, 452, 454, 456, 458-460, 466-470, 472, 473, 495, 504
- Knossos, the prehistoric tombs of, ARTHUR J. EVANS, Litt.D., F.R.S., F.S.A., on, 391; alabaster objects from, 470, 531, 532, 536-539, 544, 554, 555; analysis of graves in the cemetery of Zafer Papoura, 493; architectural details of the royal tomb of Isopata, 551; beads from, 412-416, 439, 441, 442, 448, 449, 461, 462, 463, 465, 466, 469, 470, 471, 473, 475, 476, 479, 480, 482, 519, 520, 521, 531, 533, 534, 541, 543; boars' tusks from, 456, 457, 504; bone objects from, 464, 465, 467, 468, 470, 505; bronze objects from, 391, 392, 402, 405, 411-413, 415, 416, 421-424, 426, 429-433, 435-437, 439-442, 444-450, 452, 454, 456, 458-475, 477, 479, 480, 482, 495-509, 511, 533, 545, 555; carpenter's tomb, 403, 440, 504; cemetery of Zafer Papoura, 391; chamber tombs, 393, 417, 418, 422, 424, 435, 436, 437, 439, 441, 449, 453, 454, 455, 457, 458, 465, 469, 470, 471, 472, 473, 475, 476, 477, 480, 493, 494; chieftain's tomb, 404, 441, 496, 500, 508; clay chests or larnakes from, 396, 398, 399, 400, 405, 417-420, 422, 424, 435, 437, 439, 440, 449, 454, 455, 457, 458, 466, 469, 470, 473, 476, 477, 480; clay objects from, 412, 413, 418, 439, 457, 458, 475, 477, 531, 544, 555; comparative note on a chamber-tomb at Milatos, 483; crystal objects from, 441, 449, 470, 475, 476, 479, 533, 543, 544, 555; cylinder of Egyptian porcelain from, 461, 462; discovery and excavation of the royal tomb of Isopata, 526; gems from, 442, 449, 477, 479, 496, 519; general conclusions regarding the royal tomb of Isopata, 554; general plan of the cemetery of Zafer Papoura, 492; general remarks on the cemetery of Zafer Papoura, 493; glass objects from, 412, 413, 461, 462, 473; gold objects from, 405, 412, 413, 415, 416, 437, 442, 445, 446, 447, 448, 449, 461, 466, 477, 479, 490, 519, 520, 521, 531, 541; graves of Zafer Papoura and their contents, 411; human remains from, 392, 395, 396, 398-400, 404, 411-415, 421-424, 426, 435-442, 449, 450, 452-462, 464-467, 469-473, 475-478, 480, 526, 527, 530, 534; hunter's tomb, 420, 504; incised marks on tombs, 403, 437, 556; ivory objects from, 405, 415, 416, 424, 426, 433, 434, 435, 442, 445, 453, 479, 494, 505, 533, 545; jewellery from, 519, 520, 521; lapis lazuli objects from, 531, 534, 541, 542, 543; objects found in the royal tomb of Isopata, 536; paste objects from, 392, 412, 413, 439, 449, 461, 462, 463, 466, 467, 468, 470, 473, 480, 482; pit-caves, 405, 414, 415, 420, 449, 450, 452, 453, 454, 456, 459, 460, 461, 462, 465, 467, 468, 493, 494; plans of tombs, 395, 401-404, 406-410, 412-415, 418, 419, 422, 423, 427, 435, 436, 438, 440, 442, 443, 450, 451, 453, 455, 456, 458, 460, 461, 463, 466, 467, 468, 471, 472, 474, 476, 478, 482; plaster objects from, 426, 429, 533, 546,

Knossos—continued.

Knossos—*continued*.

- 554; porphyry bowl from, 531, 536, 555;
 pottery from, 392, 403, 411, 412, 414-418,
 421, 423, 437, 439, 440, 449, 452, 454-465,
 467, 468, 470, 471, 473-475, 477, 480, 482,
 509-519, 523, 526, 527, 530-532, 534, 546-
 551, 554; Roman remains from, 417;
 royal tomb of Isopata, 526; shaft-graves,
 401, 411, 412, 413, 414, 437, 438, 439, 440,
 441, 449, 452, 458, 459, 464, 466, 468, 469,
 472, 473, 493, 494; silver objects from,
 471, 533, 545; stone objects from, 411,
 412, 413, 415, 418, 423, 435, 436, 437, 439,
 441, 449, 450, 453, 454, 466, 470-475, 477,
 479, 482, 509, 516, 532, 533, 539, 540, 541,
 554, 555; tomb of the tripod hearth,
 424; types of sepulture in cemetery of
 Zafer Papoura, 391; weapons from, 402,
 405, 421, 422, 426, 433, 441, 442, 445, 447,
 448, 450, 452, 456, 458, 466, 467, 471-474,
 477, 495-504; wooden objects from, 426,
 434, 469, 470
- Kyrkeby, Richard, chancery proceedings by, 6
 Kyrkeman, Rauff, 15

L.

- Ladle, bronze, from Knossos, 426, 433
 Lambard, John, chancery proceedings against, 2
 Lamps, bronze, from Knossos, 426, 430, 508;
 Roman, pottery, from mines in Spain,
 329; stone, from Knossos, 352, 540, 541,
 554, Mycenae, 540
 Laneford, James, bond of, 275
 Langrede, Alice, deed of, 276; Robert, 276;
 Thomas, 276
 Laon (France), painted glass at, 180; sculpture
 at, 182, 183
 Lapis lazuli, beads of, from Knossos, 531, 534,
 541; pendants of, from Knossos, 531, 534,
 542, 543
 Larnakes, *see* Chests, clay
- Last supper, the, on a wall painting, 371
 Law, the Old and New, on front of Wells
 Cathedral, 148, 153, 154, 173, 188; other
 examples of, 174
 Leaden objects: pigs, from Carthage harbour,
 332; Rio Tinto mines, 332; weights,
 from Caerwent (Mon.), 103, Rio Tinto
 mines, 324
 Leasingham (Linc.), chancery proceedings re-
 lating to, 15
 Ledcumbe, Maud de, agreement by, 77; Richard
 de, 77
 Leeke, Henry, 22
 Le Mans (France), sculpture at, 176, 182; story
 of St. Eustace in painted glass at, 170
 Lena (Spain), church of Santa Cristina at, 48;
 altar piece of, 50; plan of, 48; restoration
 of, 51
 Lenus, a name for Mars, 294
 LETHABY, W. R., suggestions as to the identifica-
 tions of the Wells sculptures and imagery,
 170
 Lids with button handles, steatite, from Knossos,
 541
 Ligortino, clay chests or larnakes from, 400, 417,
 486
 Limestone vessel, from Knossos, 532, 539
 Linares (Spain), Roman bas-relief from, HORACE
 SANDARS on, 311; description of, 321
 Lincoln Cathedral, painted glass in, 171; sculp-
 ture on south door of, 174
 Llanarmon-in-Yale (co. Denbigh), effigy at, 65
 Lock, Adam and Thomas, masons at Wells, 180
 London:
 Chancery proceedings under an alderman's
 commandment, 2
 Churches: St. Bartholomew the Great, bells
 of, 389, list of rectors of, 390, parish
 boundaries of, 377; St. Paul's Cathedral,
 chancery proceedings mentioning the
 rood at, 18; St. Sepulchre, bells for-
 merly in, 389
 Guildhall, figures of the Virtues on porch
 of, 178

London—*continued*.

- Hospital of St. Bartholomew, arms of, 376, foundation of, 375
- Newgate prison, Roman and later remains found on the site of, in 1903-4, PHILIP NORMAN, TREASURER, on, 125, account of the prison, 135, barrels, wooden, found, 138, brick culvert under, 134, city ditch, 137, coins found, 139, later gateway, 133, pottery, Roman and medieval found, 138, 139, Roman gateway, 130, Roman wall, 125, stone objects found, 139, subway under, 133
- Priory of St. Bartholomew, West Smithfield, notes on the Augustinian, by E. A. WEBB, F.S.A., 375, archway leading from Smithfield to the church, 384, 385, arms of, 376, bell tower, 381, bells, 389, boundaries, 377, bull of Pope Celestinus III., 376, chapter house, 382, charter of Richard I., 377, cloisters, 382, 383, 384, Dominicans established in, by Queen Mary, 383, foundation of, 375, frater, 384, gates of priory close, 377, grant of indulgencies by Pope Alexander V., 380, kitchen, misericord, parlour, and library, 384, list of priors, 390, parish chapel, 388, residents in, after the suppression, 386, tomb of Rahere, 382, Walden chapel, 380, work of Rahere, 378, of prior Thomas, 379, of prior Watford, 380
- Roman wall of, 125-142, ditch of, 136, gate in, 130
- Smithfield, derivation of, 376, horse fair and racing held in, 375
- Loom weights, lead, Roman, stone mould for casting, from Palazuelos (Spain), 324
- Lothair, crystal of, O. M. DALTON, M.A., F.S.A., on, 25, description of, 25, Frankish origin of, 29, other gems of the Carolingian period, 32, story of, 35; head of, on a crystal intaglio at Aix-la-Chapelle, 33
- Lothair, son of Louis d'Outre Mer, seal of, 33
- Louis the Debonair, King of France, seal of, 33
- Louis, Earl of Clermont and Duke of Bourbon, effigy of, 63
- Loup, Servais, abbot of Ferrières, letter of, 34
- Louthe, John, 15
- Luchino dal Campo, account of one of the thirty pieces of silver by, 247
- Ludolph of Suchem, account of the thirty pieces of silver by, 239, 240
- Luke, John, chancery proceedings against, 18
- Lunte, Eleanor, chancery proceedings by, 19
- Lupton, Anne, chancery proceedings against, 384
- M.
- Macalister, R. A. S., 497
- Mackenzie, Dr. Duncan, 392
- Mail, chain, and its conventional representations, J. G. WALLER, F.S.A., on, 57, banded, 65, double, 63, masclad, 61, ringed, 60, rustred, 64, single, 62, trelliced, 59
- Maldon (Essex), chancery proceedings relating to, 6
- Malmesbury Abbey (Wilts.), figures of the Virtues at, 178
- Manna, the gathering of, on a wall painting, 371
- Marescall, Nicholas, grant, to, 259
- Mars, inscription to, found at Caerwent (Mon.), 293
- Marshall, Robert, chancery proceedings against, 21, 23; William, 22
- Marshalsea, court of, chancery proceedings concerning, 4
- MARTIN, A. T., M.A., F.S.A., ASHEY, T., jun., M.A., F.S.A., and HUDD, A. E., F.S.A., on excavations at Caerwent (Mon.) in 1901-3, 87
- MARTIN, C. TRICE, B.A., F.S.A., on some chancery proceedings of the fifteenth century, 1
- Martyn, John, chancery proceedings against, 11

- Maviell, Isabel, 274; William, 274
- May, Thomas, chancery proceedings against, 14
- Medal commemorating the sea fight off Enkhuyzen, 84
- Melton, John, schoolmaster of Winchester, 257
- Middlesex, Earl of, residence of, 386, 388
- Milan, S. Eustorgio, coin preserved at, 250
- Milatos (Crete), chamber tomb at, 391, 393, 483; clay chests or larnakes in, 484, 485, 488, 491; glass bead in, 485, 493; human remains in, 488; plan of tomb, 484, 485; pottery in, 485, 486, 487, 488, 491, 492, 517, 518, 521
- Mining operations, Roman, in Baetica (Spain), 311
- Mining tools, Roman, found in Baetica (Spain), 328, 329
- Minos, tomb of, 559
- Mirror handles, ivory, from Knossos, 435, 453, 494, 505, 533, 545
- Mirrors, bronze, from Knossos, 392, 405, 415, 416, 426, 441, 445, 461, 462, 463, 464, 465, 467, 468, 473, 474, 475, 477, 480, 505, 533, 545, 555
- Molyneux, Sir William, brass to, 74
- Monkeys, lapis lazuli pendants in form of, from Knossos, 531, 534, 542, 543
- Montacute, Sibil de, prioress of Amesbury, 75
- Montes (Spain), church of San Pedro at, 54; inscription in, 54
- Montfort, Simon de, incised slab of, 58, 59
- Montserrat (Catalonia), coin preserved at, 246
- Moore, John, rector of St. Bartholomew the Great, 390
- More, Margery and Nicholas, deed of, 265
- Mortars, stone, from Caerwent (Mon.), 112, 305
- Morys, John, warden of Winchester college, 80
- Mosaic pavements, from Caerwent (Mon.), 97, 98, 99, 100, 109, 295, 301, 304; Silchester (Hants.), 352
- Mosaic wall linings, from Silchester (Hants.), 352; Wroxeter (Salop), 352; Wingham (Kent), 353
- Moscow, abbey of the Trinity and St. Sergius, coin preserved at, 246
- Moulds for casting gold beads, 416, 466; stone, Roman, for casting lead loom weights, from Spain, 324
- Mulianà (Crete), brooch from, 502; chamber tomb at, 502, 503, 524; clay chest or larnax from, 493; pottery from, 492, 502, 503, 518, 521, 531; swords from, 502
- Mycenae, alabaster vase from, 536; boars' tusks from, 457; bronze objects from, 421, 429, 434, 448, 495, 496, 497, 498, 500, 501, 506, 507, 521, 522; copper jugs from, 431, 509; gold objects from, 416, 448, 466, 513, 521; ivory object from, 505; pottery from, 500, 540; scarab from, 505; shaft graves at, 401; silver objects from, 506, 512; stone lamp from, 540; wall paintings at, 416
- Mynton, John, chancery proceedings against, 19

N.

- Nails, iron, from Caerwent (Mon.), 309
- Naranco (Spain), church of Santa Maria at, 41, documentary evidence relating to, 43, foundation inscription of, 42, plan of, 41; church of San Miguel de Lino at, 44, documentary evidence relating to, 45, plan of, 44
- Nasshe, John atte, deed of, 272
- Nativity, the, on a wall painting, 371, 372
- Neale, Sir Thomas, residence of, 386
- Necklaces, of beads and scarabs, from Knossos, 479; of gold beads, from Argos, 416, Knossos, 415, 416, 442, 448, 461, 466, 519, 520, 521, Mycenae, 416, 448, Phaestos, 416, 448, 461
- Needle, bronze, from Knossos, 439, 466
- Neleson, Thomas, 21
- Nero, Emperor, tile stamped with name of, found at Silchester (Hants.), 366

Nevill, Elizabeth de, 79; Gilbert de, deeds of, 77, 78, 79; Sir Gilbert de, 78; Henry de, deed and seal of, 77; Hervey de, deed of, 75, 76; Hugh de, deed of, 77; Sir John de, 78
 Neweman, Robert, chancery proceedings by, 20
 Newport, John, will of, 380
 Newton Solney (Derby), effigy at, 67, 68, 69
 Nicholson, John, 11
 Noreys, Master, mason at Wells, 180
 NORMAN, PHILIP, TREASURER, on Roman and later remains found during excavations on the site of Newgate prison, 1903-4, 125
 Norwich Cathedral, apsidal chapels formerly at, 378

O.

Oculus, name on an inscription found at Caerwent (Mon.), 294
 Oliver, Richard, chancery proceedings against, 3
 Onyx, gems of, from Knossos, 442, 449; sword pommels of, from Knossos, 447, Mycenae, 501
 Osney, G. of, prior of St. Bartholomew, 390
 Ottewerthe, John, mortgage by, 269
 Our Lord in Majesty, on front of Wells cathedral, 145, 165
 Oviedo (Spain), Camera Santa of S. Salvatore, coin preserved at, 249

P.

Padlock, iron, from Caerwent (Mon.), 109
 Palaikastro, bronze jug from, 430; clay chest or larnax from, 400, 490
 Palazuelos (Spain), castle of, Roman remains at, 320; Linares bas-relief found at, 321; stone mould for casting lead loom-weights from, 324

Palermo (Sicily), pit-cave tombs near, 406
 Palmer, S., printer, 388
 Panckridge, William, rector of St. Bartholomew the Great, 390
 Pans, bronze, from Knossos, 405, 426, 429, 441, 444, 508; Mycenae, 429; Phaestos, 429, 444, 508
 Pantalica (Sicily), bronze dagger and pottery from, 504
 Paris, crystal intaglios of the Carolingian period at, 33; effigy formerly in the church of the Dominicans at, 63; Nôtre Dame, sculptures at, 176, 182; St. John Lateran, coin preserved at, 249; the temple, coin preserved at, 249
 Parma (Italy), figures of Solomon and the Queen of Sheba at, 177
 Paste objects, beads from Knossos, 412, 413, 439, 449, 461, 462, 463, 466, 470, 473, 480, 482, Phaestos, 541; object with rosettes from Knossos, 392; spindle whorl from Knossos, 467, 468
 Paunton, John and Joan, chancery proceedings by, 18
 Paynell, Ralf, founder of Holy Trinity priory, York, 23; Thomas, 73
 Pekenden, John de, prior of St. Bartholomew, 390
 Pelham, Sir William, 86
 Pembridge family, effigy of a knight of, 63
 Peñalva (Spain), church of Santiago at, 52; consecration inscription, 56; plan of, 53, 55; tombstones in, 55, 56
 Pendants, crystal from Knossos, 475, 476, 479; lapis lazuli, from Knossos, 531, 534, 542, 543; serpentine, from Knossos, 412, 413; steatite from Knossos, 475
 Pepyr, Edmond, chancery proceedings against, 8
 Perrin, William, Dominican prior of St. Bartholomew, 383, 390
 Pershore Abbey (Worc.), chancery proceedings relating to, 20
 Peter, Earl of Richmond, effigy of, 62
 Petit, Mathew, chancery proceedings by, 9

- Phaestos, bronze objects from, 421, 429, 431, 444, 479, 496, 506, 508; clay chest or larnax from, 417; gold objects from, 416, 448, 461, 466; paste beads from, 541; tombs at, 393
- Phelipp, Sir William, 15
- Pickaxe, iron, from Caerwent (Mon.), 103
- Pickering (Yorks.), effigy at, 64
- Pigs of lead, from Carthage harbour, 332; Rio Tinto mines (Spain), 332
- Pins, bone, from Silchester (Hants.), 356; bronze from Knossos, 415, 423, 440; gold, from Knossos, 531, 541, Silchester, 366
- Pits at Caerwent (Mon.), 290, 297, 302
- Plant remains of Roman Silchester, 367
- Plaques, bronze, silversmith's models, 85
- Plaster tripod hearth from Knossos, 426, 429, 533, 546, 554
- Plate: gold standing cup belonging to Duke of Portland, 233; silver gilt standing cup with arms of William the Silent, 83
- Plates, gold, from Mycenae, 416, 521
- Plecy, Sir John de, 264
- Pompeii, fulling works in, 207, 208, 209, 210
- Pope, the, and doctors of the church, on a wall painting, 371, 374
- Porphyry bowl from Knossos, 531, 536, 555
- Portland, Duke of, K.G., gold standing cup belonging to, 233
- Posadas mine (Spain), copper bucket, Roman, from, 332
- Pot, bronze, from Knossos, 426, 432
- Potters' marks from Caerwent (Mon.), 297, 302
- Pottery: medieval, London, Newgate prison, 138; pre-historic, from Gezer (Palestine), 497; Gournia, 510, 555; Hagia Triada, 510; Ialyssos, 505; Knossos, 392, 403, 411, 412, 414-418, 421, 423, 437, 439, 440, 449, 452, 454-465, 467, 468, 470, 471, 473-475, 477, 480, 482, 509-519, 523, 526, 527, 530-532, 534, 546-551, 554; Milatos, 485-488, 491, 492, 517, 518, 521; Muliana, 492, 502, 503, 518, 521, 531; Mycenae, 500, 540; Pantalica, 504; Tell-el-Amarna Pottery—*continued*.
(Egypt), 516, 517; Tsarkon, 486; Roman, from Caerwent (Mon.), 103, 104, 108, 110-112, 114, 123, 291, 295, 297, 300, 302, 303, 308, 309; Knossos, 417; London, Newgate prison, 138, 139; Sierra Morena (Spain), 327
- Poulteney, John, rector of St. Bartholomew the Great, 390
- Praesos (Crete), tombs at, 393, 394
- Pratt, John, rector of St. Bartholomew the Great, 390
- Prophets, the, on front of Exeter Cathedral, 151; with King David, on wall painting, 371, 374
- Provins (France), sculpture at, 182
- Prowce, Thomas, chancery proceedings by, 2
- Pulter, Richard, prior of St. Bartholomew, 390
- Puy, Notre Dame de, coin preserved at, 246
- Q.
- Querns, from Caerwent (Mon.), 103, 105, 111, 114, 115
- Quick, John, presbyterian divine, 387
- R.
- Rahere, prior of St. Bartholomew, 390, death of, 378, founder of the priory, 375, 376, tomb of, 382, work of, 378
- Ramiro I., King of Asturias, palace of, 41, 43
- Razors, bronze, from Ialyssos, 507, Knossos, 413, 421, 426, 433, 434, 436, 437, 439, 440, 449, 450, 452, 454, 459, 460, 464, 466, 467, 469, 477, 505, Mycenae, 506, 507, Phaestos, 506; copper, from Egypt, 507
- READ, C. H., SECRETARY, on a standing cup of silver-gilt with arms of William the Silent, 83; on a gold standing cup in the possession of the Duke of Portland, 233

- REID, CLEMENT, F.R.S., on the Island of Ictis, 281
- Resurrection, the, on front of Wells Cathedral, 145, 160; on a wall painting, 371
- Rheims (France), sculptures at, 170, 176, 182, 183
- Rhodes, coins of, 246, 249, 251, 252
- Rich, Henry, earl of Holland, 387; Lord, 386, purchaser of cloister of St. Bartholomew's priory, 382, grant by, to Queen Mary, 383, 384; Sir Henry, rental of, 386
- Richard I., King, charter of, to priory of St. Bartholomew, Smithfield, 377
- Richard, prior of St. Bartholomew, 390
- Richardis, Richard, chancery proceedings by, 7
- Rider, John, 18
- Rings, bronze, from Caerwent (Mon.), 103, 108, Knossos, 465, 466, 482; gold, from Knossos, 412, 413, 415, 416, 461, 473, 479, 490, 519; silver, from Knossos, 471
- Rio Tinto mines (Spain), Roman remains found in, 324, 332
- Robert, prior of St. Bartholomew, 390
- Roberts, John Richard, rector of St. Bartholomew the Great, 390
- Rochester Cathedral, sculpture at, 174, 182
- Roger, prior of St. Bartholomew, 379, 390
- Roman fulling in Britain, GEORGE E. FOX, Hon. M.A. Oxon., F.S.A., on, 207
- Roman remains at or from, Baetica (Spain), mining operations in, 311; Caerwent (Mon.), 87, 289; Carthagenia (Spain), 332; Cástulo (Spain), 316, 317, 318; Centenillo mines (Spain), 323, 324, 325, 331; Chedworth (Glouc.), 210; Cilurnum (Northumb.), 344, 351; Cordova (Spain), 314, 315; Darenth (Kent), 219; Ebros (Spain), 321; Knossos, 417; Linares (Spain), 311, 321; London, site of Newgate prison, 125; Palazuelos (Spain), 320, 321, 324; Pompeii, 207, 208, 209, 210; Posadas mine (Spain), 332; Rio Tinto mines (Spain), 324, 332; Salas de la Galiarda (Spain), 322; Seville (Spain),
- Roman remains—*continued*.
 319, 325; Sierra Morena (Spain), 327; Silchester (Hants.), 333; Tharsis (Spain), 315; Titsey (Surrey), 214; Verespatak (Transylvania), 315; Wingham (Kent), 353; Wroxeter (Salop), 352
- Rome, S. Croce in Gerusalemme, coin preserved at, 249
- Romsey, John de, deed of, 273
- Rosas (Catalonia), coin preserved at, 249
- Rosette, enamelled, from Caerwent (Mon.), 108
- Rouen (France), crystal intaglio of the Carolingian period at, 33
- Rowe, John, presbyterian divine, 387
- Roycroft, Thomas, printer, 388
- Ryngeborne, Edith, 274; William, 274
- Ryver, John de la, 268, 269

S.

- St. Alban, figure of, at Wells, 156, 159, 198
- St. Alban's Abbey (Herts.), figures on a roof beam at, 174
- St. Aldhelm, figure of, at Wells, 173
- St. Amphibalus, figure of, at Wells, 156, 159, 201
- St. Christopher, figure of, from site of Newgate prison, London, 139
- St. Denys, 171
- St. Denys (France), coin preserved at, 246; sculptures at, 181, 182
- St. Edmund, King and Martyr, figure of, at Wells, 158, 198
- St. Edward, King and Martyr, figure of, at Wells, 156, 158, 171, 199
- St. Edwin, King and Martyr, figure of, at Wells, 158, 198
- St. Elphege, figure of, at Wells, 156, 159, 201
- St. Ethelbert, King and Martyr, figure of, at Wells, 156, 158, 172, 200
- St. Ethelburga of Barking, figure of, at Wells, 156, 160, 203
- St. Ethelred, King and Martyr, figure of, at Wells, 158

- St. Erkenwald, figure of, at Wells, 156, 160, 204
 St. Eustace, figure of, at Wells, 156, 170, 206;
 other representations of, 170
 St. Foy, 33
 St. George, figure of, at Wells, 156, 159, 200
 St. Godric of Finchale, figure of, at Wells, 156,
 159
 St. Kenelm, King and Martyr, figure of, at
 Wells, 156, 158, 171, 199
 St. Mary Magdalene, figure of, at Wells, 152, 185
 St. Nicaise, figure of, at Rheims, 170
 St. Oswald, King and Martyr, figure of, at
 Wells, 156, 158, 171, 200
 St. Oswyn, King and Martyr, figure of, at Wells,
 158, 199
 St. Paul, on a crystal intaglio, 33
 St. Quintin, Sir John de, brass to, 72
 St. Theopistis, figure of, at Wells, 159, 160, 170,
 206
 St. Thomas of Canterbury, figure of, at Lincoln,
 171, Wells, 156, 159, 170, 200
 St. Wistan, figure of, at Wells, 158
 Salas de la Galiarda, near Palazuelos (Spain),
 castle of, Roman remains at, 322
 Sale, Eve and John de la, lease to, 279
 Salisbury Cathedral, figures of the Virtues at,
 178
 SANDARS, HORACE, on the Linares bas-relief and
 Roman mining operations in Baetica, 311
 Saunder, Henry, chancery proceedings by, 9
 Savory, Sir Borradaile, rector of St. Bartholomew
 the Great, 390
 Saws, bronze, from Gournia, 440; Hagia Triada,
 440; Knossos, 440, 504
 Scarabs, Egyptian, from Knossos, 479, 516;
 Mycenae, 505
 Scudamore, Elizabeth, tablet to, 386; Philip,
 386, chancery proceedings against, 384
 Seals:
 clay, from Knossos, 457, 458, 531, 544, 555;
 engraved gems of the Carolingian
 period used as, 33; steatite, from
 Knossos, 471
 of Carloman, King of France, 33; Charles
 the Bald, King of France, 33; Charles
 the Fat, King of France, 33; Charles
 the Simple, King of France, 33; Fyfhide,
 William, 273; Henege, John, 80;
 Lothair, son of Louis d'Outre Mer, 33;
 Louis the Debonair, King of France,
 33; Nevill, Henry de, 77; Veileken,
 William, 77; Vinci, John de, prior of
 Amesbury, 75; Warre, Elizabeth la, 79,
 John la, 79; Woodlock, Henry, bishop
 of Winchester, 257; Yngoldeby, Agnes
 de, 77, Ralph de, 78
 Sefton (Lanc.), brass at, 74
 Selyman, Robert, escheator of Wilts., 78
 Senlis (France), sculpture at, 182
 Sens (France), coin preserved at, 250; monument
 to a Roman fuller at, 209, 213; painted
 glass at, 170
 Septvans, Sir Robert de, brass to, 72
 Serpentine, pendants of, from Knossos, 412, 413;
 vases of, from Knossos, 441, 541
 Seville (Spain), Roman remains in museum at,
 319, 325
 Sheba, Queen of, figure of, at Wells, 157, 159,
 174, 198; other examples of, 175, 176,
 177
 Sherrington, Walter, chancellor of the duchy of
 Lancaster, 381
 Sicily, pit-cave tombs in, 406
 Sierra Morena (Spain), Roman remains from,
 327
 Silchester (Hants.), excavations on the site of
 the Roman city at, in 1903 and 1904,
 W. H. ST. JOHN HOPE, M.A., and GEORGE
 E. FOX, Hon.M.A.Oxon., F.S.A., on,
 333; animal remains from, 369; block
 plan of portions excavated up to 1904,
 370; plant remains of, 367; *Insula*
 XXXIII., the baths, 337, description of,
 341-366; altar found in, 357; the *apodi-*
 teria of, 343, 348, 349, 351, 354, 357;
 architectural remains found in, 342, 357;
 basons of Purbeck marble found in, 344,

Silchester—*continued*.

- 346; bone pins found in, 356; the *caldaria* of, 346, 347, 349, 354, 355, 356, 359, 360, 361; coins found in, 354, 357; drains of, 343, 344, 347, 351, 352, 354, 358, 362, 363; the *frigidaria* of, 344, 351, 353, 355, 356, 357; gold earring and pin found in, 366; hypocausts in, 345, 348, 349, 351, 353, 356, 359, 360; iron objects found in, 351, 360; latrines of, 343, 347, 348, 353, 357; lines of piles found round, 363, 364, 365; masonry built on piles in, 362; mosaic pavement in, 352; mosaic wall lining in, 352; peristyle, portico, and courtyard of, 342, 346, 347, 351, 353, 357; *sudatoria* of, 345, 354, 356; *tepidaria* of, 345, 348, 352, 354, 356, 357; tile with titles of the Emperor Nero found in, 366; *unctoria* of, 348, 353, 357; wall with remains of window, 360; wall plaster in, 343, 361; warm air conduit under floor of *caldarium*, 349; window glass found in, 361; *Insula XXXIII.*, minor buildings in, 334, hearths or furnaces in, 335, 336, 337; hypocausts in, 335, 336, 340
- Silver objects: cup, standing, with arms of William the Silent, 83; cups, from Knossos, 533, 545; ring, from Knossos, 471; vessel, from Mycenae, 506, 512
- Silver, the thirty pieces of, G. F. HILL, M.A., on, 235; coins passing as such, 245; literature concerning, 235; places where the coins are preserved, 246
- Skykker, John, chancery proceedings by, 7
- Smyth, Edward, chancery proceedings against, 20; Henry, 15; John, 22; Stephen, 20
- Socket, iron, for pivot of gate, from Caerwent (Mon.), 101
- Solent, the, anciently a river, 286; history of, 286
- Solomon, bishop of Basra, account of the thirty pieces of silver by, 237, 238
- Solomon and the Queen of Sheba, on front of Wells Cathedral, 157, 174, 195, 198; other examples of, 175, 176, 177
- Somonor, Alice and Roger, grant to, 273
- Southrop (Glouc.), font at, 174, 178
- Southwark, the Marshalsea, chancery proceedings concerning, 4
- Spade sheath, iron, from Caerwent (Mon.), 106
- Spain, post-visigothic churches in, ARTHUR G. HILL, M.A., F.S.A., on, 39; Roman mining operations in, HORACE SANDARS on, 311
- Spateman, Thomas, rector of St. Bartholomew the Great, 390
- Spearheads, bronze, from Ialysos, 504; Knossos, 405, 426, 433, 441, 445, 456, 466, 467, 495, 504; iron, from Caerwent (Mon.), 306
- Spencer, Edward, chancery proceeding against, 8; John, 8
- Sphinx, on a gold ring from Knossos, 416; on ivory mirror handle from Knossos, 453, 505; ivory wing of, from Mycenae, 505
- Spindle-whorls from Knossos, 415, 418, 423, 435, 437, 439, 441, 449, 453, 467, 468, 470-475, 479, 482, 533, 544
- Spycer, Thomas, 11
- Stanciffe, James, rector of St. Bartholomew the Great, 390
- Stanes, Maud, 21
- Stanton Fitzwarren (Wilts.), font at, 178
- Steatite, beads of, from Knossos, 415, 441, 533; cup, from Knossos, 453, 454, 466; lids with button handles, from Knossos, 541; pendant, from Knossos, 475; scarab, from Knossos, 479; seal, from Knossos, 471; spindle-whorls, from Knossos, 423, 435, 437, 439, 441, 449, 453, 470-475, 479, 482; vase, from Knossos, 477, 479
- Stone objects: altar, Roman, from Caerwent (Mon.), 308, Silchester (Hants.), 357; basons, from Cilurnum, 344, Knossos, 479, 509, Silchester, 344, 346; bas-relief, from Linares (Spain), 311, 321; figure of St.

Stone objects—*continued*.

- Christopher from the site of Newgate prison, London, 139; hammers, from Roman mines in Spain, 329; head, from Newgate prison, 139; hones, from Knossos, 411, 412, 436, 449, 450; lamps, from Knossos, 352, 540, 541, 554, Mycenae, 540, mortars, from Caerwent, 112, 305; mould for casting lead weights from Spain, 324; querns, from Caerwent, 103, 105, 111, 114, 115; sculptured stone, from Cástulo (Spain), 316, 317; spindle whorls, from Knossos, 415, 418; vase, from Knossos, 477
- Stud, bone, from Knossos, 464, 465
- Sudbury, Simon of, bishop of London, 378
- Sumpter, Agnes, 20; Henry, chancery proceedings by, 19
- Surgical instrument, from Caerwent (Mon.), 114
- Susanna, the story of, on the crystal of Lothair, 25, 26
- Sutton, John, 81
- Swinburne, Sir Robert and Sir Thomas, brass to, 72
- Sword pommels, crystal, from Knossos, 533, 543, 555; onyx, from Knossos, 447, Mycenae, 501
- Swords, bronze, from Gezer (Palestine), 497; Ialysos, 501; Knossos, 402, 405, 442, 445, 447, 448, 450, 452, 456, 477, 495-503; Mulianà, 502, 503; Mycenae, 495, 496, 497, 498, 500, 501; Phaestos, 444, 449
- Symeon, Symon, 79
- Syracuse, coin of, 250; well-cave tombs near, 407
- T.
- Taylor, John, 14
- Taylor, Agnes and John le, deed of, 258; Margaret, release by, 258
- Tell-el-Amarna (Egypt), pottery from, 516, 517
- Terra-cotta figures from Roman mines in Spain, 315, 325; lamps from Roman mines in Spain, 329
- Tewkesbury (Glouc.), effigy at, 68, 69
- Tharsis (Spain), Roman remains at, 315
- Thirty pieces of silver, the, G. F. HILL, M.A., on, 235; coins passing as such, 245 literature concerning, 235; places where the coins are preserved, 246
- Thomas, archbishop of Canterbury, deed of, 377
- Thomas, John, chancery proceedings by, 7
- Thomas, prior of St. Bartholomew, 378, 390, work of, 379
- Thurbern, Robert, warden of Winchester college, 82
- Thurborn, John, bond of, 275
- Thurmond, Maud, mortgage by, 269
- Tiberius, Emperor, coin of, 253
- Tile, flanged, Roman, from Caerwent (Mon.), 109; stamped with name of the Emperor Nero from Silchester (Hants.), 366
- Tin trade of Britain, 281, 282, 288
- Tioda, a Spanish architect, 42, 45, 49
- Titsey (Surrey), Roman remains at, showing traces of fulling works, 214
- Tollard Royal (Wilts.), effigy at, 68
- Tollerton, Robert, prior of St. Bartholomew, 390
- Tours (France), story of St. Eustace in glass at, 170
- Towker, John, chancery proceedings by, 13; William, 13
- Tripod, bronze, from Enkomi, 392; Knossos, 392
- Tripod hearth, plaster, from Knossos, 426, 429, 533, 546, 554
- Trumpington, Sir Roger de, brass of, 58
- Tsarkon (Crete), pottery from, 486
- Tucher, Johann, account of one of the thirty pieces of silver by, 248
- Tunbek, Amy, 18
- Tunisia, pit-cave tombs in, 406
- Tweezers, bronze, from Knossos, 392, 465, 505
- Tyi, wife of Amenhotep III., scarab with name of, 505

Tyler, Wat, riots of, 381
Tyre, coins of, 253, 254

U.

Umfrey, William, chancery proceedings by, 4
Uvedale, Alice, marriage settlement of, 274

V.

Vache, Elizabeth and Sir Philip la, 264
Valledolmo (Sicily), bronze dagger from, 504
Vases, alabaster, from Abydos, 536, 537, 538,
Enkomi, 538, Gournia, 537, Knossos, 532,
536, 537, 538, 539, 554, 555, Mycenae, 536;
bronze, from Knossos, 477, 479, Phaestos,
479; stone, from Knossos, 477
Veileken, William, grant and seal of, 77
Venta Silurum, *see* Caerwent (Mon.)
Verespatak (Transylvania), Roman gold mine at,
315
Vespasian, Emperor, inscription relating to repair
of roads by, at Seville, 319
Victoria and Albert Museum, crystal intaglio of
the Carolingian period, in, 33
Vincennes (France), coin preserved at, 249
Vinci, John de, prior of Amesbury, seal of, 75
Virgin, the, and Child, on front of Wells Cathe-
dral, 149; coronation of, on front of Exeter
Cathedral, 151, Wells Cathedral, 145, 153
Virtues, the, on front of Wells Cathedral, 150,
177; other examples of, 178

W.

Wakerley (Northants.), advowson and manor of,
80
Walden, John, will of, 380; Lord Roger,
Treasurer of England, 380
VOL. LIX.

WALLER, J. G., F.S.A., on the hauberk of chain
mail and its conventional representations,
57
Wall paintings, at Friskney (Linc.), 371;
Knossos, 490; Mycenae, 416; Pompeii,
208, 209, 210
Wall plaster, from Caerwent (Mon.), 97, 99, 107,
111, 112, 114, 115, 123, 298, 301, 304, 305;
Silchester (Hants.), 343, 361
Wanton, Sir John, brass of, 58
Warener, Joan and Thomas, 274
Warre, Elizabeth and John la, arms, grant, and
seals of, 79
Waryn, Walter, deed of, 271
Watford, John, prior of St. Bartholomew, 380,
390; Thomas de, prior of St. Bartholomew,
390
Watson, Ralph, rector of St. Bartholomew the
Great, 390
Waulsort, Abbey of (France), the crystal of
Lothair, formerly preserved at, 25, 35
WEBB, E. A., F.S.A., notes on the Augustinian
priory of St. Bartholomew, West Smith-
field, 375
Weights, lead, from Caerwent (Mon.), 103; Rio
Tinto mines (Spain), 324
Weledon, Gilbert de, prior of St. Bartholomew,
390
Wells Cathedral Church (Somerset), the imagery
and sculptures on the west front of, W. H.
ST. JOHN HOPE, M.A., on, 143; colouring
of the images, 181; costume of the figures,
149; detailed description of the images,
184; foreign parallels, 181; general re-
view of the imagery, 144; probably the
work of Bishop Joscelin, 165, 180; scheme
for the imagery, 168, 178; suggestions as
to the identifications of the sculptures
and imagery, by W. R. LETHABY, 170;
William of Worcester's description of,
148
Wells, stone-lined, at Caerwent (Mon.), 96, 100,
103, 110, 112, 295, 309
Wenemaer, Willem, brass to, 69

- Westfield, Thomas, rector of St. Bartholomew the Great, 390
- Westminster Abbey, story of St. Eustace formerly in a chapel in, 170
- Whyte, Nicholas, chancery proceedings by, 15
- Whytyng, William, chancery proceedings by, 11
- Wight, Isle of, causeway joining it to mainland, 287, 288; geological formation of, 284; Roman name for, 282; trade route for tin to, 282, 288; wasting of coast line of, 284, 285
- William, abbot of Pershore, 20
- William the Silent, silver gilt standing cup with arms of, 83
- Willoughby, Sir Hugh, 16; Dame Margaret, chancery proceedings against, 16
- Wills, of John Brewere, 266; Hugh Cran, 268
- Winchelsea, Robert of, archbishop of Canterbury, 378
- Winchester, deeds relating to, 257, 263, 265, 278, 279, 280; local custom as to the estates of married women, 265, 266; special custom as to devise of lands by will, 268
- Window glass, Roman, from Silchester (Hants.), 361
- Wingham (Kent), mosaic wall lining in Roman villa at, 353
- Witton (Cheshire), grammar school of, 389
- Wivenhoe (Essex), brass at, 73
- Wolff, Matthaeus, silversmith, 234
- Woman, the irreverent, on a wall painting, 371
- Woode, Richard, chancery proceedings against, 6
- Wooden objects: barrels, from site of Newgate prison, London, 138; box with bone inlays from Knossos, 426, 434; bucket, from Caerwent (Mon.), 110; knife handle, from Knossos, 469, 470
- Woodlock, Henry, bishop of Winchester, deed and seal of, 257
- Wright, John, benefactor to the priory of St. Bartholomew, 380; William, 21, 22
- Wroxeter (Salop), mosaic wall lining in baths at, 352
- Wykeham, John, 274; Thomas, 274; Sir Thomas, grant by, 262; William, marriage settlement of, 274; William of, bishop of Winchester, deeds of, 256, settlement of, on marriage of grand-nephew, 274
- Wyncheombe, Simon, prior of St. Bartholomew, 390
- X.
- Xanthoudides, Dr. 400, 502
- Y.
- Yarborough, Earl of, F.S.A., silver-gilt standing cup with arms of William the Silent belonging to, 83
- Yngoldeby, Agnes and Ralph de, deed and seals of, 77, 78
- York, chancery proceedings relating to, 6; Holy Trinity priory, chancery proceedings relating to, 21, 23, foundation of, 23; the minster, effigy in, 63, 64; painted figures formerly in, 174
- Z.
- Zafer Papoura, cemetery of, 391; comparative note on a chamber-tomb at Milatos, 483; general remarks on, 493; graves and their contents, 411; types of sepulture, 391
- Zeno, Emperor, coin of, 250

